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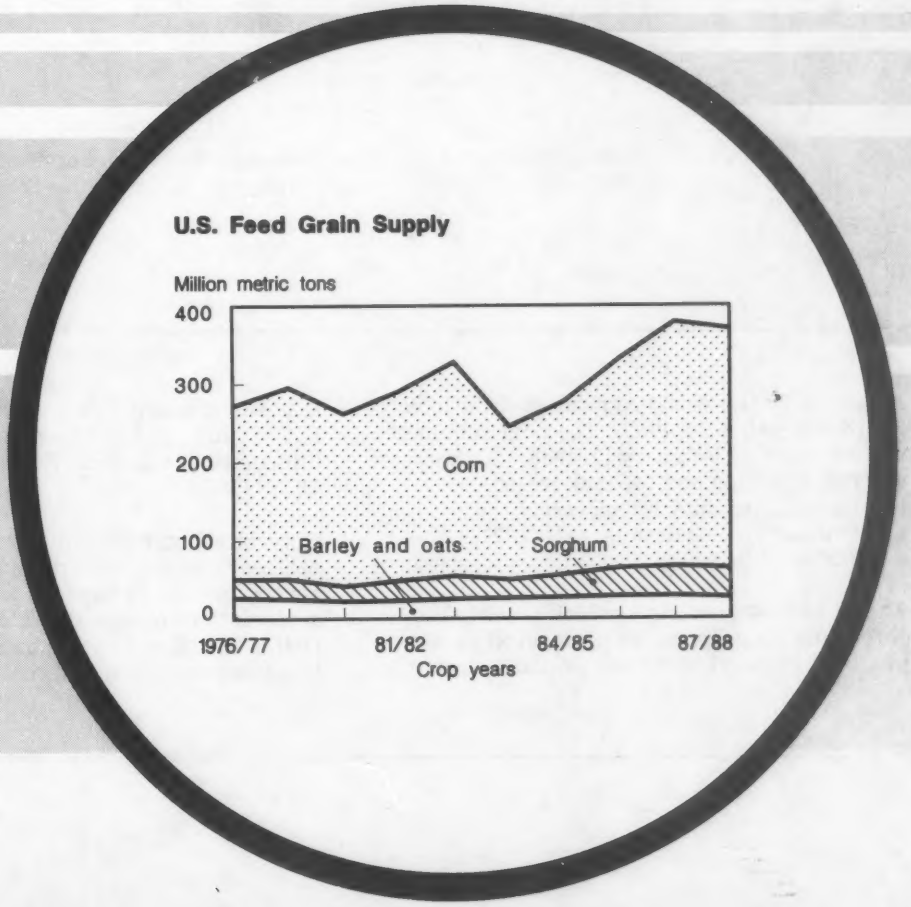
Feed

Situation and Outlook Report



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SUMMARY

The U.S. feed grain supply for 1987/88 is estimated at 370.4 million metric tons, down from 379.5 million a year earlier. Record high carryin stocks of 152.3 million tons are up 26 million from a year earlier, but this year's production of 217.5 million tons was almost 35 million less than last year's harvest. Five regions have a smaller supply this year, four regions have a larger supply, and one is unchanged. The greatest change was in the Corn Belt, where a 9.6-million-ton decrease was larger than the total decline for the United States.

World coarse grain production is forecast to fall 4-5 percent in 1987/88 mainly because of the smaller U.S. crops. Foreign output will show little change, staying close to the record level of 1986/87, but foreign carryin stocks are about 5 million tons larger this year. World import demand is forecast to rise only about 1.5 percent, but this is heavily weighted by downturns in Saudi Arabia and the Soviet Union. The United States will capture a greater share of the world market, continuing the recovery that started last year from the depressed level of 1985/86. The key factors behind the U.S. gains are tighter foreign exportable supplies of corn, favorable export prices, and export enhancement programs for barley.

U.S. disappearance of feed grains is estimated to be a record 235 million tons this year, up 3.4 percent from last year. Food, seed and industrial use (FSI) is expected to be up almost a million tons to 36.4 million. Exports are forecast at 51.6 million tons, up 5.3 million from last year. Feed and residual use is expected to reach a record 147 million tons, up 1.5 million from 1986/87.

Total use this year is expected to exceed this year's production by 17.5 million tons, resulting in a similar decline in carryout stocks. However, carryout stocks next year would still represent an ending stocks-to-use ratio of almost 58 percent, well above the ratio that would push prices significantly above the loan rate. Thus, use will have to exceed production for some time to reduce stocks substantially.

The corn supply for 1987/88 is 12.1 billion bushels (307.4 million metric tons) down 1.7 percent from last year. Carryover stocks of 4.9 billion bushels account for almost 41 percent of the total supply, and production--at 7.2 billion--represents the balance. Corn accounts for 82.6 percent of the feed grain supply, making it the dominant factor in the pricing of feed grains.

The supplies of sorghum, barley, and oats are 1,472 million, 879 million and 537 million bushels, respectively. Sorghum represents about 10 percent of the feed grain supply, and barley and oats combined a little over 7 percent. In contrast with the other feed grains, oat supplies are very tight. Carryin stocks this year were the lowest since 1937, and production is the lowest since 1876.

Disappearance of corn is expected to be a record 7.7 billion bushels, up 4 percent from last year. Exports are forecast to increase 13 percent to 1.7 billion bushels this year. Feed and residual use will be a record 4.8 billion, up about 100 million bushels. Grain consuming animal units (GCAU's) will total a little over 77 million, up about 3 percent from 75 million in 1986/87. Increased cattle on feed and larger hog, broiler, and turkey production this year will boost GCAU's. FSI use is expected to increase 34 million bushels, continuing the upward trend for FSI use of corn. However, the rapid growth of the early 1980's may be over. Major users of corn for FSI face maturing markets and growth will be based primarily on increases in population and slight changes in consumer patterns.

The average price received by farmers for corn this year is expected to range from $1.60 to $1.90 a bushel, compared with the 1986/87 average of $1.50. The value of generic certificates exchanged for corn and planting and growing conditions next spring and summer will primarily determine where the price falls within the range. Higher corn prices this year will mean higher prices for sorghum and barley. Because oats are in tight supply, they apparently are being fed at prices well above their feeding value relative to corn.

FEED GRAIN SUPPLY AND USE

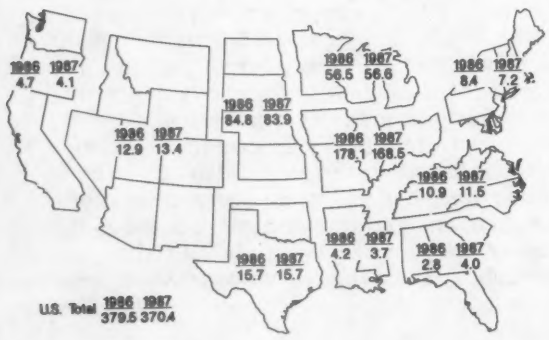
The U.S. feed grain supply for 1987/88 is estimated at 370.4 million metric tons, 2.4 percent less than the 1986/87 record. Carryin stocks account for 41 percent and production 59 percent of this year's supply, compared with 33 and 67 percent, respectively, for 1986/87.

Corn makes up 82.6 percent of the 1987/88 supply, sorghum 10.1 percent, and barley and oats combined for 7.3 percent. Comparable percentages of supply for 1986/87 place corn at 82.3 percent of the supply, sorghum 10 percent, and barley and oats 7.7 percent.

Regions with an increase in supply (excluding imports) for 1987/88 are Appalachia, Southeast, Lake, and Mountain. Regions with a decrease are New England, Corn Belt, Delta, Northern Plains, and the West. The Southern Plains are unchanged from a year earlier. The most significant change is the Corn Belt with a decrease of 9.6 million tons--larger than the total decrease for the United States. New England had a decrease of 1.2 million tons. The Southeast increased 1.2 million tons reflecting the recovery from the drought last year. All other changes were of much smaller magnitudes.

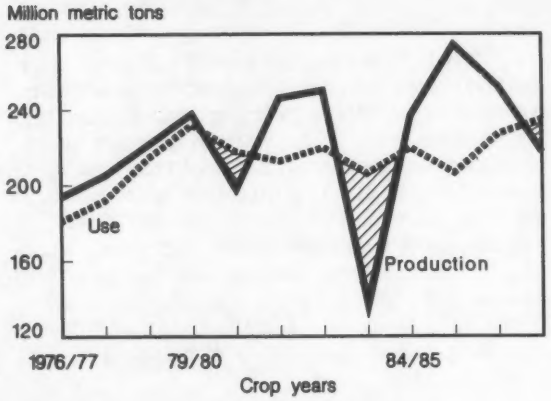
Disappearance of feed grains is estimated to total 235.0 million metric tons in 1987/88, a gain of 7.8 million from last year. Food, seed, and industrial use is expected to increase almost 1 million tons, exports up 5.3 million, and feed and residual use may be up about 1.5 million.

Feed Grain Supply by Region[1]



• Million metric tons

Feed Grains: Production and Use



With expected use of feed grains for 1987/88 exceeding production by 8 percent, carryout stocks will be reduced. Ending stocks next summer are forecast to be about 135 million metric tons, down 11 percent from this year's beginning stocks of 152 million. This year will be only the third year in the past 11 that use has exceeded production. However, the other two years---1980/81 and 1983/84---were drought years. Area harvested in 1983/84 also was sharply reduced by the payment-in-kind (PIK) feed grain program.

Estimated carryout stocks for 1987/88 are 57 percent of the forecast use. The forecast stocks-to-use ratio is down sharply from last year's 67 percent but still reflects a bearish situation. A stocks-to-use ratio of about 25 percent would be neutral in that at ratios below that level prices would start to rise significantly above the loan rates. Thus use will need to exceed production for some time to reduce stocks substantially.

The length of time needed to work stocks down depends on a number of factors. These include the extent to which domestic production is limited, the growth of domestic FSI use, feed demand, the rate of foreign economic growth, the world financial situation (especially the debt load), world crop conditions, and foreign trade and agricultural policies. Underlying all of these are the objectives of U.S. agricultural and macroeconomic policy.

Corn

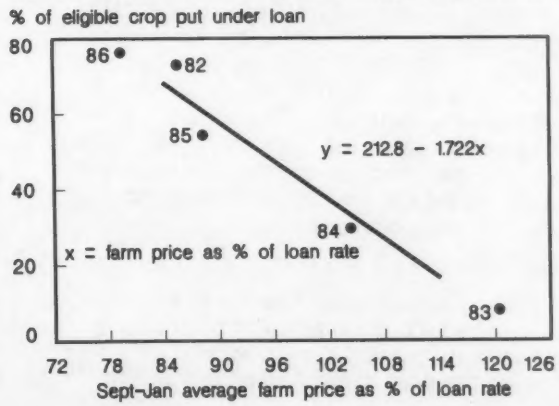
At the outset of the 1986 crop year, it appeared that the 8.2 or 8.3 billion bushel 1986 corn crop might leave carryover stocks as high

as 5.5 billion. The export market was in the doldrums, with 1986 March–August exports the lowest since 1971. Similarly, ethanol/gasoline blend sales fell below year–earlier levels during the summer of 1986 and continued sluggish. Even feed and residual use fell 17 percent below year–earlier use during June–August 1986. Farm prices during the 1986 harvest season were a record low relative to the loan rate and in general a bearish tone prevailed in the market the first half of the 1986/87 marketing year.

The outlook turned around starting early in 1987 when the USSR bought 1 million tons of corn, the first purchase since early June 1986. About the same time, it became apparent that the corn harvest in the Southern Hemisphere exporting countries was below expectations. Also, ethanol/gasoline blend sales began to grow.

Total use for March–August this year amounted to almost 3.4 billion bushels, 800 million more than used during the corresponding period last year. Exports exceeded year–earlier shipments by 510 million bushels, feed and residual use was up 278 million, and food and industrial processing exceeded year–earlier use by 27 million. Prices firmed during April–June even though a large volume of corn was made available to the market by generic certificate exchange. With the strong second half, 1986/87 ended with a total disappearance of 7.4 billion bushels, up 14 percent from a year earlier and exceeded only by the record 7.6 billion in 1979/80. Food, seed, and industrial use and feed and residual use were record high, and exports were 260 million bushels above 1985/86, which were the lowest since 1974/75. Ending stocks turned out to be slightly under 4.9 billion bushels and the earlier bearish tone was replaced by generally bullish views.

Farm Prices, Loan Rate, and Loan Placements



A total supply of 12.0 billion bushels is available for the 1987/88 crop year, about 2.5 percent less than the 12.3 billion for 1986/87. However, from the standpoint of price and use, the "free" supply situation is more important than total quantity.

Free Stocks Tight

Carryover stocks this year include "free" 1/ stocks of -161 million bushels compared with 193 million last year. The negative free stocks may reflect delays in reporting loan and inventory activity and/or rotation of farmer–owned reserves (FOR) during June–August this year. If FOR stocks are in danger of going out of condition, farmers may sell them and provide replacements with new–crop grain within 60 days. In addition this year, 26 counties in Illinois were granted 90 days to replace rotated FOR stocks because a portion of the Illinois river was closed to barge traffic for repairs to locks. If these negative free stocks are the result of FOR rotation, it also implies that a like amount of the new–crop harvest is already committed to replacement.

The corn crop this year is estimated at 7.2 billion bushels compared with last year's crop of nearly 8.3 billion. During the past 5 years, the relationship between the September–January average price received by farmers and the loan rate has been a good indicator of the proportion of eligible corn placed under loan (total loan placements / (U.S. average yield X area planted in the program)). The further the September–January average price falls below the loan rate, the larger the share of eligible corn placed under loan. In 1986/87, 4.87 billion bushels of the 1986 corn crop went under loan (76 percent of the estimated 6.38 billion bushels eligible). With September–January prices averaging 79.35 percent of the loan rate last year, the equation would estimate that placements would be 76.2 percent of eligible corn.

This year, about 49.5 million acres were planted in compliance with the program and

1/ Total stocks less CCC inventory, regular loans, and FOR including special producer storage loans.

Corn supply, disappearance and stocks, September-August

Item	1986/87	1987/88[1]
	Million bushels	
Supply		
Beginning stocks		
CCC	546	1,443
FOR[2]	711	1,498
Loan	2,589	2,102
"Free"	194	-161
Total	4,040	4,882
Production		
Placed under loan	4,870	3,800
Not under loan	3,383	3,366
Replace FOR	?	?
Available to market	?	3,366
Total	8,253	7,106
Imports	2	2
Total supply	12,294	12,050
Disappearance		
FSI	1,191	1,225
Exports	1,504	1,700
Feed and residual	4,717	4,800
Total	7,412	7,725
Stocks September 1		
CCC	1,443	1,700
FOR 2/	1,498	1,500
Loan	2,102	1,025
"Free"	-161	100
Total	4,882	4,325
Exchanged for generic certificates	3,172	

1/ Forecast, except for beginning stocks.
2/ Includes special producer storage loans.

the U.S. average yield for all corn is estimated at 120.3 bushels per acre. Thus, about 6 billion bushels of corn are eligible to be placed in 9-month crop loans. If the price received by farmers for September--January averages 87 percent of the loan rate, about 63 percent (212.81 / (1.722 X 87)) of the eligible corn would be placed under loan or about 3.8 billion bushels. This would leave 3.4 billion bushels of this year's crop not under loan, part of which will replace corn rotated out of the FOR. Thus out of the 12.0-billion-bushel total supply, less than 3.4 billion bushels are readily available to the market. However, about 5.9 billion bushels, 2.1 from the 1986 crop and 3.8 assumed placed from 1987 crop, would be in regular crop loans and available to the market through exchange for generic certificates or as cash redemption by farmers. Farmers would need to receive about $1.90 – $1.95 a bushel to cover principal and accrued interest if they redeemed regular loans. The interest rate last January was 5.875 percent but this November the rate is 8 percent.

Use Expected To Exceed Production

Total use for the 1987/88 crop year has been estimated at 7.7 billion bushels, an increase of 300 million from 1986/87. Use at this level would exceed this year's corn crop by 560 million bushels, implying a decrease in ending stocks by this amount or ending stocks of 4.3 billion bushels next September 1. This would be the first decline in carryover stocks since the 1983/84 crop year.

Exports are forecast at 1.7 billion bushels (43.2 million metric tons), an increase of 200 million from last year's shipments. This would represent a 76-percent market share of the 56.8 million tons forecast for total world corn trade in 1987/88, compared with last year's share of 70 percent of 56.5 million tons.

Exports of corn as grain through October 22, totaled 236 million bushels, an average weekly rate of 32.5 million. For the comparable period last year, shipments were 201 million bushels, or about 28.4 million a week. An average weekly rate of almost 33 million bushels will be necessary to achieve the export forecast.

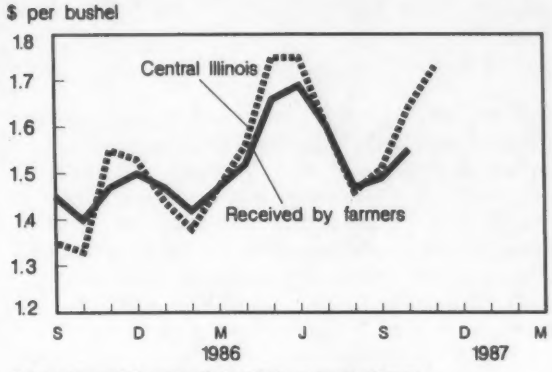
Food and industrial use is expected to increase about 35 million bushels, from a little under 1.2 billion bushels in 1986/87 to a little over 1.2 billion in 1987/88. Almost 60 percent of the increase is expected from ethanol/gasoline blend sales, 20 percent from growth in the high fructose corn syrup market, with the balance from sales of starch and food products.

Feed and residual disappearance is forecast at 4.8 billion bushels compared with 4.7 billion in 1986/87, an increase of 2.1 percent. This is a slightly smaller increase than the gain of 3.4 percent expected in grain-consuming animal units (GCAU's). In 1986/87, feed and residual use rose almost 15 percent from year-earlier disappearance of 4.1 billion bushels even though the GCAU's decreased slightly. Feeding to heavier weights, particularly for hogs, would account for some increase in feed use in 1986/87, but less than the increase reflected in the feed and residual category. Therefore, part of the increase last year appears to have been the result of residual factors rather than in actual livestock and poultry use.

Prices Stronger in 1987/88

The change from a bearish to bullish price outlook by farmers appears to have been a factor in the market during harvest this year. Despite the corn harvest running almost a

Monthly Average Corn Prices



October farm and November Central Illinois prices are midmonth.

month ahead of last year and the loan rate being $1.82 compared with $1.84 after Gramm-Rudman adjustment last year, farmers appear to be marketing corn in orderly fashion this year. Last year the national average price received by farmers was $1.44 per bushel during September-November, while at Central Illinois elevators the price averaged $1.41. In contrast, the average farm price for September and preliminary October this year was $1.52 a bushel. The Central Illinois price averaged $1.58 but had risen to $1.73 in mid-November.

Last year generic certificates were exchanged for almost 3.2 billion bushels of corn from CCC stocks, the FOR, and regular loans. Approximately 43 percent of market use depended on these exchanges. The other 57 percent came from "free" carryover stocks, 1986 crop not placed under loan, some cash loan redemptions, sales of CCC inventory declared unstorable, and rotation of FOR stocks.

Free supplies this year will be even tighter than last year if loan placements approximate 3.8 billion bushels of this year's crop (Chart - Farm prices, loan rates, and loan placements). The price necessary to free up 7.7 billion bushels for use this year will depend to a large extent on the availability and use of generic certificates in exchange for corn.

During the 1986/87 corn marketing year, about $7.7 billion in generic certificates were exchanged for commodities, with $5.7 billion, 74 percent, used in corn exchanges. A total of $8.73 billion of certificates were available between September 30, 1986, and a year later. On September 3, 1986, $1.73 billion in certificates were outstanding, with $7 billion issued during the marketing year. This year about $1.93 billion worth were outstanding at the beginning of the crop year and an additional $2.3 billion were issued in October. If the same number of certificates are issued during 1987/88 as last year ($7.0 billion less $2.3 billion issued in October), the quantity available would total $8.93 billion, slightly more than the total available in 1986. However, these certificates may not redeem as many bushels of corn as last year.

Corn prices are averaging above a year earlier which would tend to reduce the number of bushels that could be exchanged with a given value of certificates. Secondly, the amount of corn exchanged also will depend on the proportion of total certificates used in corn exchanges. In November, the CCC experimented with a new program of weekly bids for wheat to be exchanged for certificates. For the weeks ending November 6 and November 13, CCC accepted bids for 8.6 and 9.2 million bushels of wheat, respectively, in exchange for generic certificates. This program could result in a smaller proportion of the total supply of generic certificates being available for use for corn exchanges this year.

The Department of Agriculture can only pay 50 percent of advanced deficiency payments in generic certificates. However, up to 100 percent of other payments can be made in certificates. Thus the Department has the authority to issue a significantly larger total value of certificates in 1987/88.

Total corn use for 1987/88 is estimated at 7.7 billion bushels and free supply may be something less than 3.3 billion bushels, leaving somewhat more than 4.4 billion to be made up by generic exchanges, CCC sales, and rotation of FOR stocks. If these sources fall significantly short of meeting needs, prices will rise in order to make up the difference by cash redemptions. Some producers may redeem corn in order to free up storage space even if cash prices are less than necessary to cover loan costs plus accumulated interest. However, for a large volume of cash redemptions, the price received by farmers likely would have to be in the range of $1.90-1.95.

Issue and use of generic certificates

Date	Value issued	Value exchanged	Value used for corn	Bushels of corn
	- - - - Billion dollars - - - -			Million
1986				
April-Aug.	1.4	.87	.47	252.6
Sept.-Nov.	1.3	.81	.52	343.8
1987				
Dec.-Feb.	3.1	1.51	1.21	750.9
Mar.-May	2.3	3.52	2.70	1,641.0
June-Aug.	1.3	.96	.78	436.1
Sept.-Oct.	2.3	1.27	.90	626.6
Total	11.7	8.95	6.58	4051.0

The average farm price for 1987/88 is expected to fall between $1.60 and $1.90 a bushel. If corn exchanges for generic certificates do not exceed year-earlier levels by a substantial amount, the season average price will be closer to the upper end of the range. On the other hand, if certificates cause a much larger volume of corn exchanges, prices will hold closer to the lower end.

During September and October this year about 626.6 million bushels of corn were exchanged for $897.9 million in generic certificates. In total, $1,270.2 million worth of certificates were exchanged for all commodities, with corn representing 70.7 percent. For a comparable period last year, 197 million bushels of corn were exchanged for $274 million of certificates. Corn represented 59.4 percent of the total exchanges. This year the weekly rate of exchange was 69.6 million bushels compared with 22.4 million last year and 30.3 million per week for the June-August quarter of this year. Because ASCS county offices are converting from a manual to a computer processing system the September-October data may include exchanges that occurred earlier and miss other exchanges that occurred in those months.

Sorghum

Sorghum disappearance for 1986/87 amounted to 761.1 million bushels out of a total supply of 1,493 million, leaving carryover stocks of 732 million. Food, seed, and industrial use was 14.6 million bushels, 13.0 million less than a year earlier. Exports were 198.3 million bushels, a gain of 20 million from 1985/86. Feed and residual use amounted to 548 million bushels, 116 million less than a year earlier. Corn prices dropped relatively more than sorghum prices from 1985/86 to 1986/87, making corn a lower cost energy source in some regions.

The average price received by farmers in 1986/87 was $1.37 a bushel ($2.45 per cwt), with a peak price of $1.57 in June. The loan rate, after the Gramm-Rudman adjustment, was $1.74 a bushel and farmers needed about $1.82 to cover principal and accrued interest if they redeemed regular 9-month loans for cash. However, nearly 155 million bushels were exchanged for generic certificates.

Sorghum is being harvested from 10.5 million acres this year, down 24 percent from the 13.9 million last year. Greater program participation--83 percent of base this year compared with 72.6 percent last year--and smaller plantings outside the program account for the decrease. However, a record yield of 70.5 bushels per acre, 5 percent above last year's previous record of 67.7 bushels, is partly offsetting the reduction in area planted. This year's crop of 741 million bushels is down 21 percent from last year's harvest. This year's crop plus 732 million bushels in carryin stocks gives a total supply of 1,473 million, just 20 million less than last year.

Free Supplies Tight

Carryin sorghum stocks this year show negative free stocks of 49 million bushels. As with corn, this may represent delays in reporting loan and inventory and/or rotation of some FOR stocks during the summer, which will be replaced out of the new crop.

Farmers placed 358.4 million bushels of 1985 sorghum and 395.5 million bushels of the 1986 crop under loan. The proportions of eligible sorghum (yield x program area harvested) were 63.9 percent in 1985 and 64.9 percent in 1986. This year, 8.9 million acres were planted in compliance with the feed grain program. With an average yield of 70.5 million bushels, about 627 million bushels would be eligible for loans, and loan placement could amount to 400 million bushels. Consequently, free supply this year may be less than 340 million bushels, depending on how much sorghum is actually placed under loan.

Sorghum supply, disappearance, and stocks

Item	1986/87	1987/88
Supply		
Beginning stocks		
CCC	207	409
FOR 1/	75	93
Loan	264	279
"Free" stocks	6	-49
Total	551	732
Production		
Placed under loan	396	400
Not under loan	546	341
Replace FOR	?	?
Available for market	?	<341
Total	942	741
Imports	0	0
Total	1493	1472
Disappearance		
FSI	15	15
Exports	198	225
Feed and residual	548	550
Total	761	790
Exchanged for generic certificates	155	

1/ Includes special producer storage loans.

During the 1986/87 crop year, about 155 million bushels of sorghum were exchanged for generic certificates and a small amount under regular loan was redeemed for cash. This year, the combination of exchanges for generic certificates and cash redemptions will have to be much larger to meet forecast market needs.

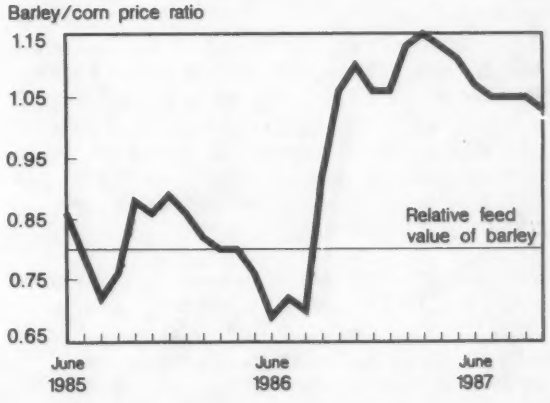
Barley

Total barley production in 1987 was 518 million bushels, down 92 million from 1986/87. Although average yields increased by almost 1 bushel to 51.7 bu./acre, harvested acreage decreased 17 percent to 10.0 million acres. A total of 2.9 million acres were withheld from production in response to the 1987 acreage reduction program. In the principal producing State of North Dakota, yield was 47 bushels per acre compared with 51 in 1986, and production declined 23 percent to 136.3 million bushels. Montana ranked second in production with 94.5 million bushels, up 9.5 million from 1986 and a 64.5-million-bushel increase from 1985. Roughly three-fourths of the acreage in North Dakota is devoted to malting barley varieties while only one-fourth of Montana acreage is seeded to malting varieties. Between 25 and 30 percent of total U.S. barley production is used for malting.

June 1 beginning stocks for this crop year were 356 million bushels, compared with 325 million for 1986/87. Free stocks increased 29 million to 68 million bushels. Of the remaining stocks, 90 million bushels were under CCC loan, 76 million were in CCC inventory, and 122 million were in FOR or in the special producer loan program. Imports have been small in recent years and will remain low at 5 million bushels this year. The total 1987/88 supply is projected to be 879 million bushels.

Barley use in 1987/88 is expected to be 2 percent lower than 1986/87 at 575 million bushels. The decline is expected to be from reduced exports although sales under the Export Enhancement Program will continue. Barley feeding is projected to remain unchanged from 1986/87 at 275 million bushels. Two factors are likely to affect barley feed use. Cool, wet weather in the Dakotas resulted in some poor quality malting barley, adding to the supply of feed barley. This is reflected in a rise in the malting-feed barley price spread to as high as $1.01 per bushel in August, the peak harvest month in the Northern Plains. Although increased supplies and lower feed barley prices suggest more barley feeding, the feed barley/corn price ratio remains well above the level implied by the relative feeding value of barley. Based on metabolizable energy values

Relationship Between Farm Prices of Barley and Corn



for ruminants, a bushel of barley has a feed value of about 80 percent that of a bushel of corn. The barley/corn price ratio has been above .8 since August 1986. Although down from a high of 1.15 in March, the price ratio for the mid-October prices received by producers remains near 1.0. Barley feeding is likely to decline until relative prices more closely reflect feeding values.

Food, seed, and industrial barley use is expected to remain essentially unchanged from year-earlier levels at 175 million bushels. Distilled spirits and beer provide the main use in this category and have taken between 140 and 150 million bushels each year since 1980. Imports of malt beverages have more than tripled since the mid-1970's, but still represent less than 4 percent of total supplies and have not significantly affected domestic barley use in this category.

The average price for all barley is projected between $1.70 and $2.00 a bushel for the 1987/88 crop year. For the first 5 months of the season, the producer price has averaged $1.85. Malting barley prices were $2.55 and $2.38 in August and September. Feed barley prices have declined since the beginning of the crop year and have averaged $1.64.

Oats

Oat production for 1987 is estimated at 369 million bushels, 4.5 percent below a year ago and 29 percent below 1985. Yields declined from 62 to 54 bushels per acre in Wisconsin and from 62 to 55 bushels per acre in Iowa between 1986 and 1987. These two States produced 24 percent of the 1986 oat crop. The national yield averaged 53.3 bushels per acre in 1987 compared with 56.3 in 1986.

Planted acreage for 1987 was 22 percent higher than 1986. However, harvested acreage increased less than 1 percent to 6.9 million acres. Over 61 percent of the planted area was left unharvested, because oats were planted extensively as a cover crop in response to the conserving use required for acreage reduction programs.

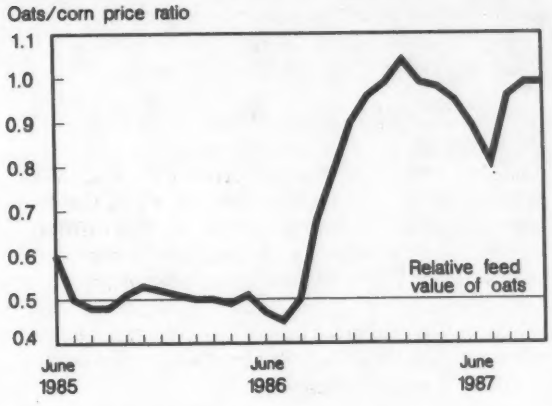
Carryin stocks in June were 133 million bushels. The CCC inventory was 3.5 million bushels, FOR was 2.1 million bushels, 3.9 million were outstanding CCC loans, and 1.5 million were in the special producer loan program. The remaining 122 million bushels were available as free stocks. Imports are estimated to rise 6 percent to bring total supply for 1987/88 to 537 million bushels, compared with 603 million in 1986/87.

Domestic disappearance for 1987/88 is projected to decline to 425 million bushels--down 9.5 percent from last year and almost 22 percent from 1985/86. Feed use is expected to be down 45 million to 350 million bushels. This follows a 65-million-bushel decline in oat feeding the year before for a 2-year decline of 24 percent. Food, seed, and industrial use is projected to increase slightly to 75 million bushels. Exports will remain low at about 1 million bushels.

Ending stocks are projected to decline to 111 million bushels, resulting in a stocks-to-use ratio of .26, which indicates a relatively tight supply situation. This follows the same pattern that developed in the 1986/87 season when the stocks-to-use ratio dropped to .28 from .34 the year earlier. Tight oat supplies have caused prices to remain high in relation to the loan rate of 94 cents per bushel for 1987. The mid-month average price received by producers for October was $1.54/bu. and by October 23 the national average producer price reached the target price of $1.60/bu. which is the release price for oats in the FOR. Although this means oats previously unavailable to the market can be released, the amount in FOR and under CCC loan is not large enough to alter the supply situation appreciably.

Since the beginning of the 1985/86 crop year, oat supplies have been tightening and prices have been rising. At the same time, corn prices have declined. Based on the feed energy value of the two grains, oat prices per bushel would be in a normal relationship with corn when the oats/corn price ratio is about .5. During the 1985/86 crop year, relative prices remained close to normal. However, the relative price reached as high as 1.03 last February and remained above .8 through June-October. Until prices move to more closely reflect feeding values, feed use of oats likely will continue to decline. With oats at $1.60/bu., a corn price of $3.20 would be needed for relative prices to reflect feeding values. The September cash price for corn at Chicago was $1.62. Even with a significant allowance for transportation costs, livestock

Relationship Between Farm Prices of Oats and Corn



producers who might typically produce and feed oats could reduce net feeding costs by selling oats and buying corn for use in livestock rations.

Hay

Hay production is estimated at 153.7 million tons, down 1.6 million tons from the record 155.3 million last year. Hay was harvested from 60.2 million acres this year, 2.1 million less than last year, but the yield was slightly higher—2.55 tons per acre, compared with 2.49 last year.

At 88.4 million tons, alfalfa and alfalfa mixtures comprised 57.5 percent of total hay production. Last year alfalfa and mixtures represented 58.9 percent of the hay harvest, or 91.4 million tons. Most of the reduction in area harvested this year, 1.2 million acres, was in alfalfa hayland. However, the average alfalfa yield was up 1.5 percent from 3.42 tons per acre last year to 3.47 tons this year. Only 10 States indicated lower yields this year: Connecticut, New York, Pennsylvania, Rhode Island, Michigan, Minnesota, Kansas, South Dakota, Arkansas, and Oregon.

Other types of hay were harvested from 34.7 million acres this year, down 800,000 from last year. However, average yield at 1.88 tons per acre was 4 percent above a year earlier, so that production of 65.4 million tons is up 2.4 percent from last year's harvest of 63.8 million tons.

May 1 carryover stocks of hay were 32.4 million short tons, 5.7 million tons above a year earlier. This brings the total supply to a record 186.1 million tons for the 1987/88 crop year, up 4.1 million tons from a year earlier. As a result of the Dairy Termination Program, and the lowest inventory of all cattle and calves since 1962, roughage consuming animal units (RCAU's) are estimated at 79.1 million, 2 percent below last year and the lowest since the early 1950's. The total hay supply represents a record 2.35 tons for each RCAU.

FEED DEMAND

Feed and residual use of the four feed grains in 1986/87 totaled 145.5 million metric tons, up 8 percent from 1985/86. In 1987/88, the total is expected to increase 1 percent to 147 million metric tons. Feed and residual use of wheat came to around 10 million metric tons in June through May 1986/87 and is expected to again account for 10 million metric tons in 1987/88.

Grain consuming animal units (GCAU's), an index of total feed requirements based on nutritional requirements of livestock and poultry, are expected to increase 3 percent from 1986/87's 75 million. However, since feed and residual use in 1986/87 for the four major feed grains was up 8 percent from the year earlier and the GCAU's were nearly constant, the rise in GCAU's for 1987/88 may not signal a corresponding increase in feed and residual disappearance. Part of the discrepancy may be attributed to the 1969–71 base for the GCAU calculations and the change in the beginning month of the market year for some of the crops. The GCAU estimates do not take into account year-to-year changes in market weights or changes in milk production per cow, which affect feed use.

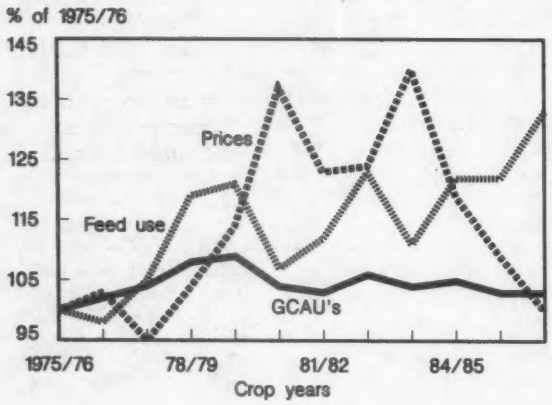
The cattle inventory was down from a year earlier on January 1 and June 1, 1987. Based on slaughter to date and the June 1 inventory, the January 1, 1986, inventory of all cattle and calves may be down again. However, commercial slaughter of fed steers and heifers during October 1986–September 1987 totaled 26 million head, up 1 percent from 1985/86. Fed slaughter in 1987/88 is expected to be about the same as in 1986/87. This should mean that concentrates fed to beef animals will remain near last year. The slaughter of nonfed cattle in 1986/87 declined

from 1985/86 and will likely be down in 1987/88.

In the calculations for GCAU's, the number of dairy cattle on January 1 is used but milk per cow is not specifically included. Because of the Dairy Termination Program, the number of dairy cows has been down from a year earlier. The number of milk cows during October–September 1986/87 was nearly 5 percent below a year earlier. However, milk production during this period was down more than 2 percent from last year as dairymen increased concentrate feeding and boosted average milk production per cow by over 2 percent. For example, the concentrates fed per milk cow on October 1, 1987, were a half pound more than in 1986. The milk–feed price relationship has been record high in 1987 and has encouraged farmers to increase concentrate feeding. While the feed–price relationship may slip some in 1988 due to increases in feed costs, the tendency will be to continue high levels of concentrate feeding.

With hog numbers increasing, feed use by hog producers will continue to rise. Barrow and gilt slaughter during October–September 1986/87 was down 4 percent from last year. However the average dressed weight of the hogs was up 1 percent from 1985/86. If hog prices slip as production increases, producers may not continue feeding to heavier weights, but feed demand will likely rise due to the larger numbers of animals. The latest data for hogs and pigs reported for September in 10 States showed the breeding and the market hog inventory both up 9 percent from a year earlier. Producers also reported their intentions to increase the number of sows farrowing during December–February by 8 percent from a year earlier. Thus feed use for hogs in 1988 will be up from 1987.

GCAU's, Prices, and Feed Use



Feed use by the poultry industry will likely be up in 1987/88. Current forecasts for 1987/88 broiler production are up 4 percent from 1986/87. Similarly, turkey production is forecast up 10 percent from 1986/87. Feed use in the egg industry this year will likely remain about unchanged from 1986/87.

FOOD, SEED, AND INDUSTRIAL USE OF CORN

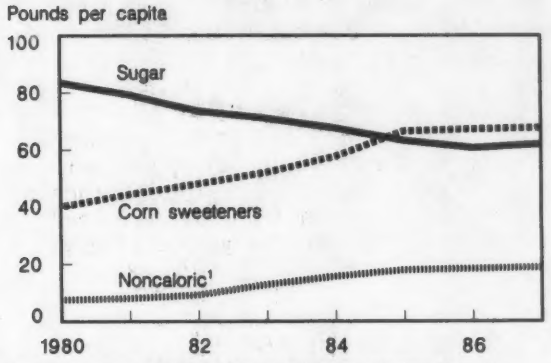
The overall trend for the food, seed, and industrial use of corn (FSI) continues upward. However, the rapid growth of the early 1980's may be over for now. The major users of corn for FSI purposes face more mature markets and growth will be based primarily on increases in population and slight changes in consumer consumption patterns.

Corn sweetener use, a major factor in the fast FSI growth of the early 1980's, continues to grow. Corn sweetener use vs. sugar use are shown in the chart below. Ten years ago, 3 pounds of sugar were consumed on a per capita basis for every pound of corn sweetener. In 1980, the rate dropped to 2 pounds of sugar for each pound of corn sweetener. Per capita use of corn sweeteners surpassed sugar use in 1985 for the first time.

In 1987, corn sweetener consumption has exceeded sugar use by 9 percent. However, for the first time in a decade, sugar disappearance actually increased. General population growth, greater demand for sugar–containing products, and a leveling off of the substitution of high fructose corn syrup (HFCS) for sugar all contributed to the reversal of the downtrend.

Non–caloric sweetener growth is also beginning to level off. Non–caloric consumption nearly doubled between 1982 and 1985 due to the emergence of aspartame. Since 1985, however, the growth rate has dropped to 3 percent annually. A recent development could increase the rate of future growth of non–caloric sweeteners. The producers of aspartame announced the

U.S. Corn Sweetener Consumption

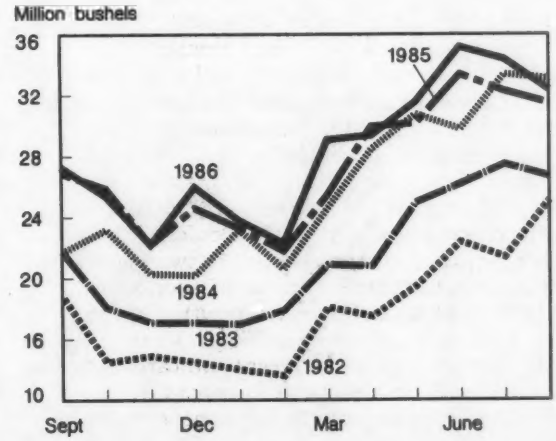


1/ Sugar sweetness equivalent. Assumes saccharin is 300 times as sweet as sugar and aspartame is 200 times as sweet.

development of technology which protects the sweetening properties of aspartame from heat during the baking process. The company has filed a petition with the Food and Drug Administration to allow the use of aspartame in baked foods and consumer baking mixes. If approval is granted, it could eventually mean new competition for 42 percent HFCS (HFCS-42), dextrose, and glucose.

Corn use for HFCS production in 1987/88 should grow about 2 percent over last year. Eight months of the 1986/87 crop year established new corn-use records for the production of HFCS. As maturity reaches the HFCS market, the number of months with new records have been decreasing. The monthly use of corn in HFCS production for the past 5 years is shown in the following chart.

Corn Use in HFCS Production



Statistics are now available in the past year for a breakout of HFCS production. Sixty-three percent of the corn used for HFCS in 1986/87 went into the production of 55 percent HFCS (HFCS-55) while the remaining 37 percent was for HFCS-42.

Shipments of HFCS were very strong this past spring and early summer. Warm weather this spring pushed soft drink sales which in turn accelerated demand for HFCS-55. HFCS shipments were anticipated to increase at 2 percent but early this summer the rate reached a 4-5 percent annual equivalent growth rate. However, demand slowed in the late summer and early fall and the overall growth rate fell back to the anticipated 2-3 percent level.

HFCS supplies, particularly HFCS-55, have been tight this summer with few supplies available on the spot market. This fall, HFCS suppliers attempted to hold prices at last summer's levels while buyers held out for lower prices. In the end, HFCS prices dropped slightly and most shipments were booked on a need-only basis. Few firms have been willing to book their supplies at a single price for the October-December quarter.

Supplies of HFCS-42, used primarily for baking purposes, were more plentiful than HFCS-55. Most of the HFCS-42 users have their needs booked for the remainder of 1987 so there are few surprises in that market.

Corn used in dextrose and glucose production has been relatively stable in the past 5 years. Dextrose prices, unchanged since spring, have shown some upward movement this fall. Meantime, glucose prices held steady, ranging primarily from 8 to 9 cents per pound. Glucose supplies were fairly tight late in the summer due to strong seasonal demand from canners and from the makers of tomato ketchup. Some producers were forced to seek additional supplies from competitors to meet orders.

There is little news in the dry fructose and crystalline markets. While there is a good possibility for expanding corn use with these products, additional time is needed to determine if the application of these products will be on a widespread commercial basis.

Corn: Food, seed, and industrial use 1/

Year beginning September 1	Wet-milled products				Dry-milled alcohol	Dry-milled and alkaline cooked products	Seed	Total
	HFCS	Glucose and dextrose	Starch	Alcohol				
	Million bushels							
1975	45	162	116	5	20	154	20	522
1976	62	164	116	10	15	155	20	542
1977	80	170	124	10	20	158	20	582
1978	105	170	124	15	20	155	20	609
1979	127	170	120	25	20	158	20	640
1980	165	183	120	35	35	160	20	718
1981	185	183	130	83	35	162	19	797
1982	215	188	127	130	50	170	15	895
1983	256	189	147	150	50	164	19	975
1984	310	187	143	170	100	160	21	1,091
1985	328	188	152	185	127	161	19	1,160
1986 2/	339	185	155	200	135	161	16	1,191
1987 3/	348	186	160	207	145	163	16	1,225

1/ Data in this table are estimates based on production and sales figures obtained from various Government and private industry publications as well as on unpublished information provided by numerous industry sources. 2/ Preliminary. 3/ Projected.

Corn used for ethanol has also been expanding. Ethanol production used about 295 million bushels of corn in the 1986/87 crop year. Ethanol sales have increased 9 percent from last year. At the end of the 1986/87 crop year, the U.S. fuel ethanol industry capacity was approximately 1.2 billion gallons, with about 1 billion gallons considered operational. Although no new plants were anticipated to go on line for the remainder of 1987, some increased production and expansion has occurred in existing plants. Ethanol production was reduced last summer to produce additional corn syrup, but major wet-millers have now shifted back to the winter season mix of production.

Ethanol-blend sales reached new monthly highs from January through August. However, in late summer many ethanol distributors were on allocation because of the high demand for HFCS from soft drink manufacturers. Ethanol producers have enjoyed a degree of profitability in recent months due to Federal and State subsidies, low corn prices, and higher gasoline and ethanol prices.

The phase-down of lead in gasoline ordered by the Environmental Protection Agency (EPA) caused some observers to anticipate sharp increases in the use of ethanol for boosting octane. To date, this has not occurred. It has also been assumed that the use of oxygenated fuels in the fight to lower carbon monoxide levels would automatically translate into higher ethanol sales. However, this has not proven to be the case in Colorado, the first State to mandate winter-time use of oxygenated fuels (January 1 to March 30, 1988). Current indications are that little ethanol will be used this winter and that the additive MTBE will be used to meet the oxygenated fuel requirements. New concerns have been raised concerning the contribution of ethanol-blend fuels to ozone pollution during the summer months. The EPA is considering requiring blended-fuel to meet the same standard as straight gasoline. This requirement could potentially reduce ethanol sales.

Crude oil prices probably won't dip to the low levels attained in late 1986. However, it is also unlikely that ethanol producers' net cost of corn (raw corn minus the price of the by products) will return to the favorable levels of the late 1986. Given these assumptions and no changes in Government policies, the ethanol industry will probably see growth continue at a more moderate rate.

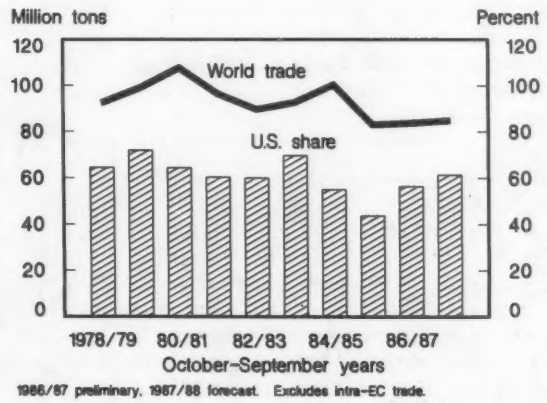
WORLD COARSE GRAIN OUTLOOK

Global trade in coarse grains is expected to grow modestly in 1987/88, but the United States will capture a greater share of the market 1/. U.S. exports will continue the recovery that started last year from the depressed level of 1985/86. The key factors behind the U.S. gains are tighter foreign exportable supplies of corn, favorable export prices, and export enhancement programs for barley.

World coarse grain production is currently forecast to fall 4.5 percent in 1987/88 to 797 million tons, the lowest outturn in 4 years. Most of this drop is due to smaller in U.S. crops. Foreign output will show little change, staying close to the record level of 1986/87. Overall supplies will be abundant with beginning world stocks for 1987/88 at a record 213 million tons. However, for the first time since 1983/84, world coarse grain use will exceed production, and stocks are forecast to fall 10 percent. World import demand is forecast to rise only about 1.5 percent, but this is heavily weighted by downturns projected for two major importers--Saudi Arabia and the Soviet Union.

The United States holds over 70 percent of world coarse grain stocks going into 1987/88--84 percent for corn, 85 percent for sorghum, and 26 percent for barley.

World Coarse Grain Trade and U.S. Share



1986/87 preliminary, 1987/88 forecast. Excludes intra-EC trade.

1/ All trade years referred to are October-September unless otherwise specified.

Consequently, with the record stocks, the United States is well placed to meet increases in exports resulting from shortfalls of competing suppliers.

Foreign Production To Remain High

Despite substantial declines in India, Eastern Europe, and some other areas, foreign coarse grain output in 1987/88 is forecast to drop only marginally below the record level of 1986/87. Production in both China and USSR is up significantly, largely offsetting declines elsewhere. China's corn crop is forecast at a record 78 million tons, reflecting both increased area and yield. Total coarse grain output in China is forecast up almost 10 million tons and will nearly equal the record set 3 years ago.

The Soviet Union's coarse grain output is estimated at 114.5 million tons, up from 106 million in 1986/87. This makes the first time that the USSR has had back-to-back crops of more than 100 million tons. Although production is large, moisture content of the grain is high and production is measured on a bunker weight basis. The percentage of dockage and waste is apparently higher than normal, estimated at 13 percent.

Wet, cold conditions characterized much of the growing and harvesting season in Northern Europe this year and crop estimates for 1987/88 have been revised downward. European Community (EC) production is now forecast down about 1 percent from last year. While not having an appreciable impact on the EC-12 total supplies of coarse grains, the poor weather caused quality problems for wheat and barley. This will result in less milling quality and more feed quality wheat, which could affect coarse grain use and trade. Scandinavian crops were similarly affected. Exports of barley and oats from Sweden and Finland will be down sharply for 1987/88.

Coarse grain production in Eastern Europe will decline 13 percent, according to current forecasts, to the lowest level in 7 years. Although wet, cold conditions hurt crops in some northern areas, extreme heat and dryness midway through the growing season hurt other areas. Corn was the most affected, with sharp drops in Yugoslavia and Romania, the two leading producers. This has led to a

sharp reduction in exportable supplies and an increase in the region's import needs for feed grains. The amount of domestic corn entering markets in Yugoslavia has been further reduced by farmers' reluctance to sell at low producer prices. Because of high inflation, it may be more profitable for farmers to hold supplies and await a price increase.

The failure of the monsoon to develop in India caused a 16 percent drop in coarse grain crops. Normally India is not an importer of coarse grains, and it is not yet clear if any will be imported this year. Some corn for feed and corn and sorghum for food relief for subsistence farmers might be needed, depending on how long stocks last.

Competitor Corn Down Sharply

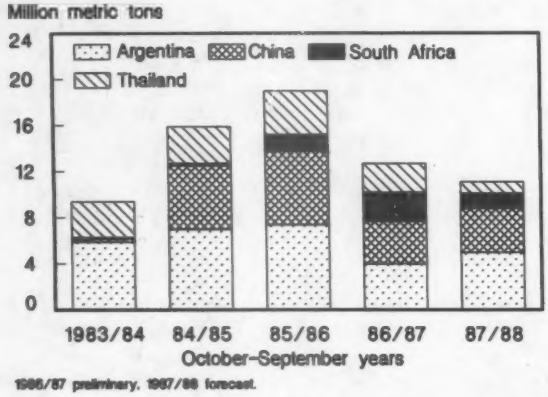
Poor weather, low prices, and some policy changes have reduced competitors' exportable supplies of corn in recent months. Exports of corn from outside the United States are forecast to decrease another 20 percent in 1987/88, continuing the downturn that developed in 1986/87 when these exports dropped 25 percent.

The same general weather pattern that hit India also hurt crop prospects in Thailand. Corn production is now forecast at 2.7 million tons, which is a decline of 50 percent from the peak output 2 years ago. Exports are forecast to sink to 1 million tons, the lowest in 2 decades. The outlook is still uncertain and the current estimate assumes an above-average second season corn crop. Area was already down this year because of some shifts into more attractively priced alternative crops. Availability of corn for export has also been squeezed by rising domestic demand for feed because rice and rice bran are currently in short supply.

It is still very early to forecast crops for the major Southern Hemisphere competitors where planting is just being completed. There are indications that Argentina will reduce planted area of corn by 10–15 percent. Much of this land will apparently shift to oilseed production because of higher returns. Harvested corn area is likely to drop less because of a large abandonment last year. Production for 1987/88 is forecast at 9.5 million tons, compared to 9 million last year. Domestic use, which rose to a record in 1986/87, is expected to remain high so that exportable supplies will stay tight. Corn exports for 1987/88 are currently forecast at 5 million tons, only a small gain from the 7-year low of 4 million in 1986/87. With its export prices currently running above those of the United States, Argentina is planning to stress quality over price to potential buyers.

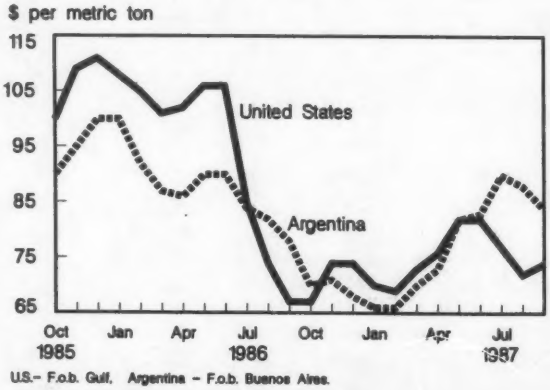
The impact of low world prices has also led to some adjustments in South Africa. Because of losses sustained in exports, the producer price for corn will now be linked to the size of the crop. A larger crop will bring a lower price to discourage increased output. Over the longer term, farmers will be encouraged to switch some cropland into pasture. The immediate impact of these changes is not certain. Good weather could

Corn Exports by Major Competitors



1986/87 preliminary. 1987/88 forecast.

Argentine and U.S. Corn Export Prices



U.S.- F.o.b. Gulf, Argentina - F.o.b. Buenos Aires.

still result in higher yields and an increase in production even with a slight drop in area. However, exports for 1987/88 are likely to drop because of lower stocks.

Exports of corn from Eastern Europe will be down sharply in 1987/88. Exports by Yugoslavia, the largest exporter in the region, are projected to fall to 500,000 tons from 1.6 million in 1986/87. This will be the lowest in 5 years. Romania's corn exports are likely to fall to 100,000 tons from 600,000 the year before.

Exports from the EC are forecast to remain close to 1986/87 when about 1 million tons were shipped to destinations outside the EC. The quantity will depend to a certain extent on the amount imported from the United States under the agreement compensating the United States for sales lost due to the EC enlargement. This calls for annual purchases of 2 million tons from outside the EC. Most of the EC corn sold to third countries is from France, but abundant supplies could also lead to exports from Spain this year. In any event, EC exports are highly dependent on policy decisions concerning export restitutions and intervention stocks.

The most uncertainty surrounds China, presently both an importer and exporter. China is projected to be a net corn exporter again in 1987/88, with exports forecast at 3.8 million tons and imports at 2.7 million. However, pressure to export more could develop if China encounters problems storing its record harvest. Storage problems contributed to the surge in exports after the previous record crop in 1984/85. Offsetting this to some extent, current low prices will probably discourage exports. And domestic demand for feed grains is continuing to expand rapidly. These factors combine to make China a potential wild card in this year's export forecast.

Competitor Barley Supplies To Show Little Change

Total foreign barley production is forecast to increase 6 million tons in 1987/88 to a record 175 million tons. The biggest gains are taking place in the USSR, where production is projected to rise 8 million tons, and China, up 900,000 tons. In the Soviet Union, planting of spring barley increased following extensive winterkill of other crops.

Among major barley exporters outside the United States, aggregate output will be virtually unchanged. Canada's crop is forecast to decrease 5 percent because of a fall from last year's record yields, but production and yields will still be the second highest ever. This decline is nearly offset by an increase in the EC, where yields improved. However, some quality problems may result in a lower proportion of malting barley available from the EC crop. There is little change forecast for the Australian crop where 4 percent more area is expected to counterbalance a lower yield.

A recent change in policies by Saudi Arabia has critical implications for the world barley market. Saudi Arabia has cut import subsidies for barley by two-thirds following the suspension of letters of credit. This signals an interest in promoting domestic output and drawing down large stocks. As a result imports are forecast to plummet to 5.5 million tons from 8.4 million in 1986/87. However, bolstered by higher demand in Eastern Europe and other areas, world imports are expected to stay level in 1987/88.

With beginning stocks for 1987/88 for the major competitors at the same level as the previous year, export availabilities will continue high. The current export forecast for 1987/88 is for a 1.3-million-ton increase for the EC, a 1.2-million-ton drop for Canada, and no change for Australia.

Sorghum and Other Coarse Grains Supplies To Decrease

Foreign sorghum production is projected to decline 4 percent in 1987/88, mainly because of the drop in India's crop. World trade in sorghum is expected to increase slightly in 1987/88, after dropping 9 percent in 1986/87 and 34 percent in 1985/86. Factors contributing to lower world trade since 1984/85 have been a drop in imports in Africa because of improved crops and a large fall in Mexico's imports. During 1986/87, the low level of trade was partly caused by a sharper drop in corn prices relative to sorghum. Some importers, particularly Japan, increased corn at the expense of sorghum in mixed feed rations.

A sharp rebound in Australia's sorghum crop mainly due to better yields should enable it to increase exports 25 percent to 1 million tons in 1987/88. However, lower sales by other exporters are expected to more than outweigh this gain. Total competitor exports are projected to decrease about 10 percent in 1987/88.

Argentina's exports are currently forecast to drop 20 percent to just 800,000 tons, the lowest in 20 years and the sixth consecutive yearly decline. Sorghum area in Argentina has fallen dramatically in recent years, decreasing an average of 16 percent per year between 1982/83 and 1986/87. Profit margins for this crop are limited by high transportation costs to ports. Very wet conditions have also discouraged production. For 1987/88, little change is expected in area while production is forecast to increase 5 percent.

China's sorghum exports dropped nearly 50 percent to 400,000 tons in 1986/87 and could fall to 200,000 in 1987/88. Rising domestic demand for feed and industrial use apparently account for this. One area of uncertainty is Sudan, whose exports jumped from 200,000 tons in 1985/86 to an estimated 600,000 in 1986/87. Bumper crops and the accumulation of large stocks in the last 2 years have enabled Sudan to export. Sales were facilitated both by Saudi Arabia's decision to only import sorghum from Sudan in 1987 and by preferential access to the EC market because of lower import levies on purchases from developing countries. The outlook for Sudan's 1987/88 exports - now forecast at 300,000 tons - will depend on the new crop (projected to fall 9 percent), the condition of existing stocks, and the needs of food deficit regions of the Sudan.

Exportable supplies of both oats and rye are forecast to decrease in 1987/88. The oats crop in Finland was particularly hard hit by poor weather, leaving no supplies for export during 1987/88. Swedish oats exports are forecast to drop 25 percent. Although output is down over 10 percent in Canada, adequate stocks will likely enable Canada to expand oats sales to the United States to make up for the shortfall from Scandinavia. France and Australia are also forecast to increase oats exports because of better crops. West German rye exports will be reduced this year and it will have less bread quality rye available. Relatively little change in the rye trade is expected as production increased in other EC countries and in Eastern Europe.

Despite Favorable Prices, Low Growth Forecast for World Import Demand

For 1987/88, the gap between foreign coarse grain production and consumption is forecast to widen, opening up more potential import demand. While some reduction in foreign coarse grain stocks is predicted, the current forecast for 1987/88 trade is for an aggregate increase of about 1.5 percent to 85 million tons. A more buoyant picture of demand emerges by excluding Saudi Arabia, whose coarse grain imports are projected to fall by 2.7 million tons this year. World imports without Saudi Arabia are forecast up 5 percent. World trade in coarse grains was nearly flat in 1986/87 when imports grew by less than 1 percent from the depressed level of 1985/86.

The biggest increases in 1987/88 demand are likely in Eastern Europe because of production shortfalls. The region's coarse grain imports are forecast up 2 million tons to 5.1 million. Because of tight foreign exchange, import decisions will probably revolve on the availability of credit and low prices. Other significant increases could take place in Mexico, Korea, and China. The only other sharp import declines are likely in Brazil, forecast down 91 percent, and the USSR, down 12 percent.

Among the factors shaping import demand are the relationship among foreign production and use, income growth, the debt situation, the availability of substitutes, and prices. Low world prices for coarse grains since mid-1986 have so far had a limited impact in stimulating demand. In countries depending on imports, including many in North Africa and East Asia, there are now indications that cheaper imported feed grains are beginning to contribute to an expansion of livestock production. In countries producing coarse grains, there is not yet evidence of major shifts in policies that insulate internal prices from the world market. But pressure to do this will increase over time.

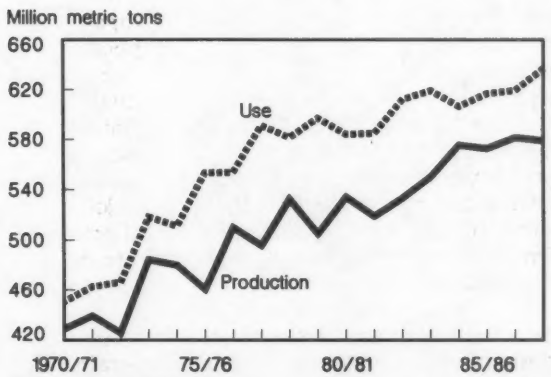
The use of wheat for feeding has made some inroads into demand for coarse grains. For 1986/87, estimated world use was at

record levels. For 1987/88, world use is projected to fall because of a decline in the Soviet Union where more barley will be available. Elsewhere, wheat feeding should remain high, and world use excluding the USSR is projected to drop only 0.5 percent. The availability of feed quality wheat for export during 1987/88 will remain large. Although supplies from Canada and Australia will likely be down from last year, the EC will have more available.

Many importers will remain quite sensitive to price levels of the competing feed grains in formulating import decisions. Prices of feed quality wheat are currently below corn on an f.o.b. basis. Feed barley prices are running even lower. Discounting part of this difference due to a lower energy content, barley will still be attractive in many markets. The availability of credit is another important factor influencing import decisions. Extensive use of guaranteed credit under the GSM programs has assisted U.S. exporters in many markets in the last 7 years.

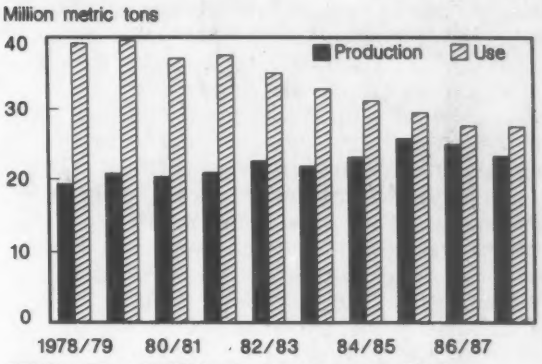
During the 1980's, foreign coarse grain utilization has been growing at a slower pace than foreign production. This has reduced trade in recent years. Imports as a share of foreign utilization fell to an estimated 15 percent during 1986/87 from an average of 18 percent between 1980/81 and 1984/85. Only a small increase is anticipated for 1987/88. During the 1980's, the growth of aggregate world consumption has slowed relative to production. However, this has been heavily influenced by consumption declines in the

Foreign Coarse Grain Production and Use



1986/87 preliminary. 1987/88 forecast.

EC-12 Corn Production and Use



1986/87 preliminary. 1987/88 forecast. Based on aggregate of local marketing years.

developed countries. Although a small upturn is forecast for 1987/88, coarse grain consumption by foreign developed countries has been trending downward steadily. This mainly reflects lower feed and industrial use in the EC (see graph). EC feeding of all grains has been declining--by an average of 1.3 million tons per year between 1979/80 and 1986/87--while feeding of protein meals and non-grain substitutes has been increasing. By 1985/86, feeding of wheat surpassed corn in the EC while wheat has also replaced much corn in starch production.

Meanwhile, coarse grain consumption and feed use by developing countries have continued to grow, although in many cases constrained by weak economic growth. For 1988, real economic growth of the developing countries as a group is projected to increase 3.1 percent compared to 2.2 percent in 1987. However, the margin of uncertainty has increased following the recent stock market crash. The highest growth is again expected in East Asia where meat production has been expanding rapidly. Within the centrally planned countries, consumption and feed use of coarse grains tend to fluctuate considerably. For 1987/88, a forecast decrease in Eastern Europe is outweighed by increases in the USSR and China, so that consumption and feeding will be up in this group of countries.

U.S. Market Share To Gain Again

Led by strong growth in corn exports, the U.S. share of the world coarse grain market (Oct.-Sept. excluding intra-EC trade) is

projected to increase in 1987/88 to 62 percent. During 1986/87, the U.S. share rebounded to 57 percent from its low of 44 percent in 1985/86.

U.S. corn exports are now forecast to increase by 3.8 million tons to 43.2 million, the highest since 1984/85. Much of this rise is expected in Eastern Europe, which will shift from a net exporter of corn to a net importer this year, and East Asia, where the United States stands to gain because of reduced Thai and South African exports. Japan and Taiwan are South Africa's major corn markets. Normal Thai markets include Malaysia, Singapore, China, Hong Kong, and Korea. Malaysia--Thailand's leading corn importer, buying up to 90,000 tons per month--has started to buy some U.S. corn. The extent of U.S. sales is difficult to predict. Because of the tight Asian rice market, the use of rice bran as a possible alternative feed to corn will be too costly. However, Malaysian feeders have expressed some interest in wheat, which could cut into corn use.

U.S. exports of corn to the EC are expected to be bolstered by shipments to Spain during 1987/88 under the agreement between the EC and the United States. However, sales are lagging and will have to pick up substantially to meet the February shipping deadline. Earlier purchases by Spain--before the bumper local harvest began in the fall--would have been more useful since corn supplies were quite tight.

Despite a forecast decline in imports by Saudi Arabia, U.S. barley exports are projected to stay strong. Export Enhancement Program sales to other markets such as North Africa and Eastern Europe are likely to increase. U.S. exports shot up dramatically in 1986/87 to 3 million tons from 800,000 tons the year before. U.S. exports for 1987/88 are forecast at 3.3 million tons.

Exports of U.S. sorghum are forecast up 15 percent to 5.8 million tons in 1987/88. The lack of supplies from Argentina is one reason. Relatively steady sales to Japan and Taiwan are anticipated, whereas exports to Mexico and Venezuela could fluctuate somewhat with domestic harvests. Venezuela's imports of sorghum should continue in response to a corn import ban. The use of imported feed wheat in Mexico to partially substitute for sorghum is expected to decline in 1987/88 after increasing significantly last year. But Mexico is expected to remain responsive to relative prices in choosing among competing feed grains and feed wheat.

World coarse grain trade: Major exporters and importers, by commodity, 1984/85-1987/88

Country	1984/85[a]	1985/86	1986/87 preliminary	1987/88 forecast
CORN				
Exporters				
U.S.	46.7	31.5	39.4	43.2
Argentina	7.0	7.4	4.0	5.0
China	5.5	6.4	3.7	3.8
Thailand	3.2	3.8	2.5	1.0
South Africa	0.2	1.4	2.5	1.3
Others	4.1	4.0	4.4	2.5
Total	66.7	54.5	56.5	56.8
Importers				
Japan	14.0	14.6	16.1	16.2
USSR	20.3	10.3	8.0	7.6
EC-12	9.0	4.8	2.8	3.2
Korea, Rep.	3.0	3.6	4.6	5.6
Taiwan	3.1	3.1	3.6	3.4
Mexico	1.7	1.7	3.4	3.5
China	0.1	0.4	1.6	2.7
East Europe	1.4	2.2	1.7	2.8
Brazil	0.2	1.9	1.4	0.0
Egypt	1.7	1.9	2.4	2.3
Others	12.2	10.0	10.9	9.5
Total	66.7	54.5	56.5	56.8
SORGHUM				
Exporters				
U.S.	7.5	4.1	5.0	5.8
Argentina	3.4	2.2	1.0	0.8
Australia	1.2	1.1	0.6	1.0
Others	1.0	1.3	1.3	0.7
Total	13.1	8.7	7.9	8.3
Importers				
Japan	4.6	5.1	4.2	3.8
Mexico	2.5	0.6	0.7	1.5
Taiwan	0.6	0.8	0.9	0.8
Venezuela	0.9	0.8	0.9	0.9
Israel	0.5	0.5	0.3	.4
Others	4.0	0.9	.9	0.9
Total	13.1	8.7	7.9	8.3
BARLEY				
Exporters				
EC-12	7.6	7.3	5.7	7.0
Canada	2.5	4.8	6.0	4.8
Australia	4.7	3.7	2.3	2.3
U.S.	1.2	0.8	3.0	3.3
Others	2.0	1.7	1.1	0.7
Total	18	18.3	18.1	18.1
Importers				
Saudi Arabia	4.7	6.6	8.4	5.5
USSR	4.7	2.7	3.1	2.0
Eastern Europe	1.6	3.4	1.2	2.1
Japan	1.7	1.5	1.2	1.4
Others	5.3	4.1	4.2	7.1
Total	18	18.3	18.1	18.1
COARSE GRAINS TOTAL TRADE	100.6	83.2	83.8	85.0

[a]October-September year.

Table 1.--Feed grains: Marketing year supply, dis

Year 2/	Supply				Domestic	
	Beginning stocks	Production	Imports	Total	Food, alcohol, and industrial	Seed
						Mill
1982/83	78.0	250.2	0.3	328.5	26.5	1.4
1983/84	108.6	136.4	0.7	245.7	28.3	1.5
1984/85	39.6	236.9	0.8	277.3	30.6	1.5
1985/86	57.5	274.4	0.9	332.8	33.5	1.5
1986/87	126.4	252.4	0.7	379.5	34.2	1.2
1987/88 4/	152.3	217.5	0.7	370.4	- - 36.5 - -	

	Area		
	National program	Set-aside and diverted	Planted
		Million hectares	
1982/83	---	1.3	49.1
1983/84	---	15.9	41.6
1984/85	---	2.1	49.5
1985/86	---	2.9	51.8
1986/87	---	7.3	48.5
1987/88	---	11.7	43.2

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ Marketing
and barley. 3/ Includes total Government loans (original and reseal).
disaster payments. 7/ Deficiency and diversion payments. 8/ Deficien

y, disappearance, area, and prices, 1982/83-1987/88 1/

Disappearance					Ending stocks		
mestic use							
Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 3/	Total
Million metric tons							
1.4	139.0	166.9	53.0	219.9	33.5	75.1	108.6
1.5	119.7	149.5	56.6	206.1	8.0	31.6	39.6
1.5	131.1	163.2	56.6	219.8	8.9	48.6	57.5
1.5	134.9	169.9	36.6	206.5	20.4	105.9	126.3
1.2	145.5	181.0	46.3	227.3	48.7	103.6	152.3
- -	146.9	183.4	51.7	235.0			135.4

	Yield per harvested hectare	Index	Government-support program
Harvested for grain		Average price received by farmers 5/	Total payments to participants
- - - - - - - - -	Metric tons	1977=100	Million dollars
42.9	5.83	130	6/ 419
32.5	4.20	156	7/ 1,103
43.2	5.48	130	8/ 1,860
45.1	6.07	108	8/ 2,785
41.3	6.11	78	7/ 7,343
35.2	6.18		7/ 8,830

keting year beginning September 1 for corn and sorghum; June 1 for oats
seal). 4/ Projected. 5/ Excludes support payments. 6/ Deficiency and
ficiency payments.

Table 2.--Foreign coarse grains: Supply and disappearance, 1982/83 - 1987/88 1/

Year	Beginning stocks	Production	Disappearance		Trade 2/	Ending stocks
			Feed	Total		
CORN			Million metric tons			
1982/83	21.3	230.1	146.5	288.5	63.3	16.7
1983/84	16.7	241.2	173.7	289.7	60.8	13.9
1984/85	13.9	263.7	191.1	305.1	66.7	19.4
1985/86	19.4	254.6	185.5	284.3	54.5	20.9
1986/87 3/	20.9	264.8	187.0	299.9	56.5	23.1
1987/88 4/	23.1	262.5	188.1	310.9	56.8	19.9
SORGHUM						
1982/83	4.8	43.9	21.6	51.2	11.6	3.5
1983/84	3.5	46.5	21.9	52.9	13.0	3.9
1984/85	3.9	44.2	22.3	51.8	13.1	3.7
1985/86	3.7	42.1	21.0	47.8	8.7	3.3
1986/87 3/	3.3	41.7	19.3	46.7	7.9	3.2
1987/88 4/	3.2	40.0	19.9	47.0	8.3	2.9
BARLEY						
1982/83	11.8	155.6	103.8	152.0	13.3	15.7
1983/84	15.7	153.6	112.1	159.1	16.6	10.6
1984/85	10.6	161.3	111.5	157.3	18.0	16.2
1985/86	16.2	163.8	115.3	160.0	18.3	20.2
1986/87 3/	20.2	169.1	121.6	168.1	18.1	22.3
1987/88 4/	22.3	175.2	126.3	177.2	18.1	22.2
TOTAL COARSE GRAINS 5/						
1982/83	42.4	532.9	321.0	591.8	89.6	43.3
1983/84	43.3	549.9	362.8	607.7	93.0	37.3
1984/85	37.3	576.1	376.3	619.0	100.6	50.0
1985/86	50.0	568.1	377.9	598.7	83.2	55.6
1986/87 3/	55.6	581.8	380.5	619.8	83.8	60.4
1987/88 4/	60.4	579.3	384.5	637.0	85.0	56.2

1/ Aggregated on basis of local marketing years, except for trade. 2/ Excluding intra-EC trade. Based on Oct/Sept. trade year. 3/ Preliminary. 4/ Forecast. 5/ Also includes oats, rye, millet, and mixed grains.

Source: Compiled from World Grain Situation and Outlook, FAS, and USDA data.

Table 3.—Corn: Marketing year supply and disappearance, area, and prices, 1982/83-1987/88

Year beginning September 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food, alcohol, and industrial	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks Aug. 30: Govt. owned	Ending stocks Aug. 30: Privately owned 1/	Ending stocks Aug. 30: Total
	Million bushels												
1982/83	2,536.6	8,235.1	0.7	10,772.4	880.3	14.5	4,520.7	5,415.5	1,833.8	7,249.3	1,142.7	2,380.4	3,523.1
1983/84	3,523.1	4,174.7	2.7	7,700.5	956.0	19.1	3,817.6	4,792.7	1,901.5	6,694.2	201.5	804.8	1,006.3
1984/85	1,006.3	7,674.0	3.5	8,683.8	1,070.0	21.2	4,079.0	5,170.2	1,865.4	7,035.6	224.9	1,423.3	1,648.2
1985/86	1,648.2	8,876.7	10.6	10,535.5	1,140.0	19.5	4,095.3	5,254.8	1,241.2	6,496.0	545.7	3,493.8	4,039.5
1986/87	4,039.5	8,252.8	2.1	12,294.4	1,175.0	15.6	4,717.3	5,907.9	1,504.4	7,412.3	1,443.0	3,439.0	4,882.0
1987/88 2/	4,882.0	7,166.0	2.0	12,050.0	- 1,225.0 -		4,800.0	6,025.0	1,700.0	7,725.0			4,325.0

Year beginning September 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Average prices: St. Louis No. 2 Yellow	Average prices: Omaha No. 2 Yellow	Average prices: Gulf Ports No. 2 Yellow	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1982/83	---	2.1	81.9	72.7	113.2	2.55	2.87	2.73	3.06	2.55	2.70	5/ 292
1983/84	---	32.2	60.2	51.5	81.1	3.21	3.49	3.23	3.67	2.65	2.86	6/ 904
1984/85	---	4.0	80.5	71.9	106.7	2.63	2.81	2.65	3.00	2.55	3.03	7/ 1,654
1985/86	---	5.4	83.4	75.2	118.0	2.23	2.37	2.25	2.52	2.55	3.03	7/ 2,470
1986/87	---	13.6	76.7	69.2	119.3	1.50	4/ 1.68/	4/ 1.53	4/1.84	1.92	3.03	8/ 6,355
1987/88	---	21.1	66.0	59.6	120.3	160-1.90				1.82	3.03	8/ 7,690

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected. 3/ Excludes support payments. 4/ September 1986-August 1987 average. 5/ Deficiency and disaster payments. 6/ Diversion payments. 7/ Deficiency payments. 8/ Deficiency and diversion payments.

Table 4.—Sorghum: Marketing year supply and disappearance, area, and prices, 1982/83-1987/88

Year beginning September 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food, alcohol, and industrial	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks Aug. 30: Govt. owned	Ending stocks Aug. 30: Privately owned 1/	Ending stocks Aug. 30: Total
	Million bushels												
1982/83	318.6	835.1	---	1,153.7	7.9	1.8	494.8	504.5	210.1	714.6	171.5	267.6	439.1
1983/84	439.1	487.5	0.1	926.7	7.7	2.3	384.7	394.7	244.6	639.3	102.8	184.6	287.4
1984/85	287.4	866.2	0.1	1,153.7	15.3	2.0	539.3	556.6	296.9	853.5	112.1	188.1	300.2
1985/86	300.2	1,120.3	---	1,420.5	26.0	1.7	663.8	691.5	178.0	869.5	207.2	343.8	551.0
1986/87	551.0	941.6	---	1,492.6	13.0	1.6	548.2	562.8	198.3	761.1	409.0	312.5	731.5
1987/88 2/	731.5	740.6	---	1,472.1	- 15.0 -		550.0	565.0	225.0	790.0			682.1

Year beginning September 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Average prices: Kansas City No. 2 Yellow	Average prices: Texas No. 2 Yellow	Average prices: Gulf ports No. 2 Yellow	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per cwt.						Mil. dol.
1982/83	---	0.7	16.0	14.1	59.1	4.41	4.80	5.19	5.41	4.32	4.64	5/ 67
1983/84	---	5.7	11.9	10.0	48.7	4.89	5.22	5.53	5.77	4.50	4.86	6/ 114
1984/85	---	0.6	17.3	15.4	56.4	4.15	4.46	5.04	4.90	4.32	5.14	7/ 158
1985/86	---	0.9	18.3	16.8	66.8	3.45	3.72	4.33	4.07	4.32	5.14	7/ 228
1986/87	---	2.3	15.3	13.9	67.7	2.45	4/ 2.73	4/ 3.24	4/ 3.22	3.25	5.14	8/ 598
1987/88	---	3.9	11.8	10.5	70.5	2.68-3.13				3.11	5.14	8/ 725

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected. 3/ Excludes support payments. 4/ September 1985-July 1986 average. 5/ Deficiency and disaster payments. 6/ Diversion payments. 7/ Deficiency payments. 8/ Deficiency and diversion payments.

Table 5.--Barley: Marketing year supply and disappearance, area, and prices, 1982/83-1987/88

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food, alcohol, and industrial	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks May 31: Govt. owned	Ending stocks May 31: Privately owned 1/	Ending stocks May 31: Total
	Million bushels												
1982/83	147.8	515.9	10.7	674.4	152.7	17.4	240.4	410.5	47.2	457.7	6.0	210.7	216.7
1983/84	216.7	508.9	7.1	732.7	149.5	19.5	282.8	451.8	91.5	543.3	11.9	177.5	189.4
1984/85	189.4	599.2	10.1	798.7	149.0	21.6	303.9	474.5	76.8	551.3	14.6	232.8	247.4
1985/86	247.4	591.4	9.0	847.8	147.2	21.4	332.6	501.2	21.8	523.0	57.4	267.4	324.8
1986/87	324.8	610.5	8.7	944.0	156.1	17.9	277.7	451.7	136.7	588.4	75.5	260.9	336.6
1987/88 2/	355.6	518.1	5.0	878.7	- 175.0 -			275.0	450.0	125.0	575.0		303.7

Year beginning June 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Average prices: Minneapolis: No. 2 or better feed	Average prices: Minneapolis: No. 3 or better malting	Average prices: Portland: No. 2	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1982/83	---	0.4	9.5	9.0	57.2	2.18	1.76	2.53	2.52	2.08	2.60	7/ 60
1983/84	---	1.1	10.4	9.7	52.3	2.47	2.48	2.84	2.91	2.16	2.60	8/ 72
1984/85	---	0.5	12.0	11.2	53.4	2.29	2.09	2.55	2.59	2.08	2.60	7/ 50
1985/86	---	0.7	13.2	11.6	51.0	1.98	1.53	2.24	2.23	2.08	2.60	7/ 160
1986/87	---	1.8	13.1	12.0	50.8	1.61	4/ 1.44	4/ 1.89	4/ 1.96	1.56	2.60	8/ 356
1987/88	---	2.9	11.0	10.0	51.7	1.70-2.00				1.49	2.60	8/392

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected. 3/ Excludes support payments. 4/Starting March 1987, shifted to Duluth. 5/ Deficiency and disaster payments. 6/ Disaster payments. 7/ Deficiency payments. 8/ Deficiency and diversion payments.

Table 6.--Oats: Marketing year supply and disappearance, area, and prices, 1982/83-1987/88

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food and industrial	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks May 31: Govt. owned	Ending stocks May 31: Privately owned 1/	Ending stocks May 31: Total
	Million bushels												
1982/83	151.9	592.6	3.9	748.4	41.7	43.3	440.6	525.6	3.0	528.6	0.7	219.1	219.8
1983/84	219.8	477.0	30.1	726.9	40.9	31.9	470.9	543.7	2.1	545.8	1.5	179.6	181.1
1984/85	181.1	473.7	34.0	688.8	41.0	34.6	432.0	507.6	1.3	508.9	1.4	178.5	179.9
1985/86	179.9	520.8	27.5	728.2	44.0	38.4	459.9	542.3	2.2	544.5	1.9	181.8	183.7
1986/87	183.7	386.4	33.3	603.4	45.0	28.1	394.8	467.9	2.8	470.7	3.5	129.2	132.7
1987/88 2/	132.7	369.2	35.0	536.9	- 80.0 -			343.9	423.9	2.0	425.9		111.0

Year beginning June 1	Area: National program	Area: Set-aside and diverted 3/	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 4/	Average prices: Minneapolis: No. 2 white, heavy	Average prices: Portland: No. 2 white, heavy	Average prices: Toledo: No. 2	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1982/83	---	0.1	14.0	10.3	57.8	1.49	1.69	2.18	1.55	1.31	1.50	---
1983/84	---	0.3	20.3	9.1	52.6	1.62	1.87	1.95	2.01	1.36	1.60	5/ 13
1984/85	---	0.1	12.4	8.2	58.0	1.67	1.81	2.12	1.92	1.31	1.60	---
1985/86	---	0.1	13.3	8.2	63.7	1.23	1.31	1.60	1.08	1.31	1.60	6/ 8
1986/87	---	0.4	14.7	6.9	56.3	1.21	1.46	1.53	1.20	.99	1.60	5/ 34
1987/88	---	0.9	18.0	6.9	53.3	1.40-1.70				.94	1.60	5/ 23

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected. 3/ Not included in the program until 1982. 4/ Excludes support payments. 5/ Deficiency and diversion payments. 6/ Deficiency payments.

Table 7.--Corn: Marketing year supply and disappearance, s

Year beginning September 1	Supply				D
	Begin-ning stocks	Produc-tion	Imports	Total	Domestic use
					Food, alcohol, and industrial	Seed	Fe an resi
					Million b
1982/83					
Sept.-Nov.	2,536.6	8,235.1	0.3	10,772.0	217.5	---	1,20
Dec.-Feb.	8,906.3	---	0.1	8,906.4	201.6	---	1,29
Mar.-May	6,899.2	---	0.2	6,899.4	226.6	11.6	1,25
June-Aug.	4,923.9	---	0.1	4,924.0	234.6	2.9	76
Mkt. year	2,536.6	8,235.1	0.7	10,772.4	880.3	14.5	4,52
1983/84							
Sept.-Nov.	3,523.1	4,174.7	0.5	7,698.3	238.6	---	1,31
Dec.-Feb.	5,651.7	---	0.6	5,652.3	222.8	---	1,05
Mar.-May	3,865.0	---	1.0	3,866.0	247.3	16.8	93
June-Aug.	2,145.1	---	0.6	2,145.7	247.3	2.3	51
Mkt. year	3,523.1	4,174.7	2.7	7,700.5	956.0	19.1	3,8
1984/85							
Sept.-Nov.	1,006.3	7,674.0	0.9	8,681.2	249.7	---	1,29
Dec.-Feb.	6,631.1	---	0.4	6,631.5	241.5	---	1,1
Mar.-May	4,623.2	---	1.1	4,624.3	283.8	17.0	1,0
June-Aug.	2,835.5	---	1.1	2,836.6	295.0	4.2	5
Mkt. year	1,006.3	7,674.0	3.5	8,683.8	1,070.0	21.2	4,0
1985/86							
Sept.-Nov.	1,648.2	8,876.7	1.0	10,525.9	278.0	---	1,2
Dec.-Feb.	8,614.7	---	1.3	8,616.0	264.0	---	1,2
Mar.-May	6,587.1	---	2.3	6,589.4	293.0	16.1	1,0
June-Aug.	4,990.0	---	6.0	4,996.0	305.0	3.4	4
Mkt. year	1,648.2	8,876.7	10.6	10,535.5	1,140.0	19.5	4,0
1986/87							
Sept.-Nov.	4,039.5	8,252.8	0.8	12,293.1	280.0	---	1,3
Dec.-Feb.	10,304.1	---	0.3	10,304.4	270.0	---	1,4
Mar.-May	8,248.2		.5	8,248.7	310.0	15.4	1,0
June-Aug.	6,332.2		.5	6,332.7	315.0	.2	7
Mkt. year 2/	4,039.5	8,252.8	2.1	12,294.4	1,175.0	15.6	4,7
1987/88							
Mkt. year 2/	4,882.0	7,166.0	2.0	12,050.0	- 1,225.0 -		4,8

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected.

nce, specified periods, 1982/83 to date--continued

Disappearance				Ending stocks		
use			Total		Privately	
Feed and residual	Total	Exports	disappearance	Govt. owned	owned 1/	Total
lion bushels						
1,202.0	1,419.5	446.2	1,865.7	372.0	8,534.3	8,906.3
1,293.6	1,495.2	512.0	2,007.2	470.8	6,428.4	6,899.2
1,258.3	1,496.5	479.0	1,975.5	491.7	4,432.2	4,923.9
766.8	1,004.3	396.6	1,400.9	1,142.7	2,380.4	3,523.1
4,520.7	5,415.5	1,833.8	7,249.3	1,142.7	2,380.4	3,523.1
1,311.0	1,549.6	497.0	2,046.6	1,227.0	4,424.7	5,651.7
1,056.0	1,278.8	508.5	1,787.3	1,214.0	2,651.0	3,865.0
939.5	1,203.6	517.3	1,720.9	195.0	1,950.1	2,145.1
511.1	760.7	378.7	1,139.4	201.5	804.8	1,006.3
3,817.6	4,792.7	1,901.5	6,694.2	201.5	804.8	1,006.3
1,294.2	1,543.9	506.2	2,050.1	206.7	6,424.4	6,631.1
1,182.9	1,424.4	583.9	2,008.3	209.7	4,413.5	4,623.2
1,009.1	1,309.9	478.9	1,788.8	221.7	2,613.8	2,835.5
592.8	892.0	296.4	1,188.4	224.9	1,423.3	1,648.2
4,079.0	5,170.2	1,865.4	7,035.6	224.9	1,423.3	1,648.2
1,215.5	1,493.5	417.7	1,911.2	388.6	8,226.1	8,614.7
1,299.6	1,563.6	465.3	2,028.9	509.4	6,077.7	6,587.1
1,085.9	1,395.0	204.4	1,599.4	550.9	4,439.1	4,990.0
494.3	802.7	153.8	956.5	545.7	3,493.8	4,039.5
4,095.3	5,254.8	1,241.2	6,496.0	545.7	3,493.8	4,039.5
1,387.9	1,667.9	321.1	1,989.0	968.2	9,335.9	10,304.1
1,470.8	1,740.8	315.4	2,056.2	1,362.2	6,884.6	8,248.2
1,090.9	1,416.3	500.2	1,916.5			6,332.2
767.8	1,083.0	367.7	1450.7			4,882.0
4,717.4	5,908.0	1,504.4	7,412.4	1,443.0	3,439.0	4,882.0
4,800.0	6,025.0	1,700.0	7,725.0			4,325.0

ed.

Table 8.--Sorghum: Marketing year supply and disappea

Year beginning September 1	Supply				Domestic	
	Begin-ning stocks	Produc-tion	Imports	Total	Food, alcohol, and industrial	Seed
						Mi
1982/83						
Sept.-May	318.6	835.1	0	1,153.7	6.0	0.9
June-Aug.	529.1	0	0	529.1	1.9	0.9
Mkt. year	318.6	835.1	0	1,153.7	7.9	1.8
1983/84						
Sept.-May	439.1	487.5	0	926.6	5.7	1.1
June-Aug.	368.9	0	0.1	369.0	2.0	1.2
Mkt. year	439.1	487.5	0.1	926.7	7.7	2.3
1984/85						
Sept.-May	287.4	866.2	0.1	1,153.7	12.4	1.5
June-Aug.	360.8	0	0	360.8	2.9	0.5
Mkt. year	287.4	866.2	0.1	1,153.7	15.3	2.0
1985/86						
Sept.-May	300.2	1,120.3	0	1,420.5	22.1	1.2
June-Aug.	630.0	0	0	630.0	3.9	0.5
Mkt. year	300.2	1,120.3	0	1,420.5	26.0	1.7
1986/87						
Sept.-May	551.0	941.6	0	1,492.6	11.0	1.0
June-Aug.	823.7	0	0	823.7	2.0	.6
Mkt. year 2/	551.0	941.6	0	1,492.6	13.0	1.6
1987/88						
Mkt. year 2/	731.5	740.6	0	1,472.1	-15.0 -	

1/ Includes quantity under loan and farmer-owned reserve. 2/ Project

sappearance, specified periods, 1982/83 to date--continued

Disappearance					Ending stocks		
Domestic use			Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
Seed	Feed and residual	Total					
Million bushels							
0.9	453.5	460.4	164.2	642.6	54.0	475.1	529.1
0.9	41.3	44.1	45.9	90.0	171.5	267.6	439.1
1.8	494.8	504.5	210.1	714.6	171.5	267.6	439.1
1.1	356.5	363.3	194.4	557.7	78.0	290.9	368.9
1.2	28.2	31.4	50.2	81.6	102.8	184.6	287.4
2.3	384.7	394.7	244.6	639.3	102.8	184.6	287.4
1.5	542.2	556.1	236.8	792.9	111.1	249.7	360.8
0.5	-2.9	0.5	60.1	60.6	112.1	188.1	300.2
2.0	539.3	556.6	296.9	853.5	112.1	188.1	300.2
1.2	626.9	650.2	140.3	790.5	181.4	447.5	630.0
0.5	36.9	41.3	37.7	79.0	207.2	343.8	551.0
1.7	663.8	691.5	178.0	869.5	207.2	343.8	551.0
1.0	502.1	514.1	154.8	668.9	400.4	423.3	823.7
.6	46.1	48.7	43.5	92.2			731.5
1.6	548.2	562.8	198.3	761.1	409.0	322.5	731.5
	550.0	565.0	225.0	790.0			682.1

rojected.

Table 9.—Average prices received by farmers, United States, by months, 1982-87 1/

Item and year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Average 2/
						Dollars per bushel							
Corn													
1982	2.15	1.98	2.13	2.26	2.36	2.56	2.71	2.95	3.03	3.04	3.13	3.35	2.55
1983	3.32	3.15	3.17	3.15	3.15	3.11	3.21	3.32	3.34	3.36	3.30	3.12	3.21
1984	2.90	2.65	2.55	2.56	2.64	2.62	2.67	2.70	2.68	2.64	2.60	2.44	2.63
1985	2.29	2.11	2.21	2.29	2.33	2.32	2.29	2.30	2.39	2.32	2.00	1.73	2.23
1986	1.45	1.40	1.47	1.50	1.47	1.42	1.47	1.52	1.66	1.69	1.60	1.47	1.50
1987	1.49	1.55*											
						Dollars per cwt							
Sorghum													
1982	3.80	3.70	3.78	3.97	4.09	4.42	4.67	4.92	5.05	5.05	5.03	5.29	4.41
1983	5.26	5.01	4.98	4.93	4.92	4.74	4.85	5.00	5.08	4.94	4.64	4.58	4.89
1984	4.24	4.05	4.05	4.15	4.16	4.10	4.24	4.46	4.54	4.52	4.04	3.74	4.15
1985	3.27	3.30	3.47	3.76	3.69	3.55	3.67	3.80	3.99	3.43	3.06	2.66	3.45
1986	2.36	2.34	2.38	2.41	2.37	2.36	2.45	2.58	2.69	2.80	2.68	2.52	2.45
1987	2.43	2.49*											

Item and year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average 2/
						Dollars per bushel							
Oats													
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	1.46	1.48	1.49	1.54	1.54	1.49
1983	1.51	1.46	1.45	1.55	1.62	1.67	1.73	1.81	1.88	1.81	1.82	1.84	1.62
1984	1.80	1.68	1.62	1.60	1.69	1.64	1.72	1.74	1.69	1.68	1.68	1.60	1.67
1985	1.59	1.31	1.16	1.10	1.08	1.17	1.20	1.18	1.16	1.14	1.13	1.21	1.23
1986	1.10	.90	.86	.99	1.11	1.32	1.44	1.46	1.47	1.46	1.49	1.57	1.21
1987	1.51	1.29	1.41	1.48	1.54*								
Barley													
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	2.16	2.00	2.09	2.22	2.36	2.18
1983	2.32	2.20	2.34	2.46	2.53	2.55	2.55	2.55	2.47	2.50	2.54	2.78	2.47
1984	2.61	2.54	2.26	2.25	2.29	2.25	2.19	2.24	2.21	2.18	2.16	2.22	2.29
1985	2.14	2.08	1.98	1.88	1.96	2.05	2.07	2.05	1.95	1.88	1.85	1.73	1.98
1986	1.57	1.67	1.51	1.45	1.58	1.69	1.61	1.60	1.63	1.69	1.69	1.76	1.61
1987	1.75	1.84	2.00	1.87	1.77*								
Malting Barley													
1982	2.26	2.10	2.38	2.58	2.22	2.26	2.39	2.32	2.00	2.09	2.13	2.18	
1983	2.05	2.06	2.50	2.69	2.72	2.61	2.61	2.50	2.47	2.46	2.54	2.53	
1984	2.52	2.48	2.50	2.52	2.52	2.39	2.18	2.29	2.11	2.17	2.17	2.10	
1985	2.02	2.13	2.49	2.33	2.24	2.32	2.19	2.13	1.99	1.93	1.85	1.66	
1986	1.52	2.07	2.23	1.85	1.83	1.80	1.65	1.70	1.69	1.69	1.65	1.67	
1987	1.70	2.02	2.55	2.38	*2.11								
Feed Barley													
1982	2.52	2.23	1.98	1.91	1.87	1.94	1.98	2.07	1.99	2.08	2.26	2.43	
1983	2.52	2.31	2.23	2.41	2.45	2.51	2.52	2.58	2.47	2.54	2.55	2.86	
1984	2.72	2.60	2.10	2.13	2.19	2.19	2.20	2.22	2.27	2.19	2.16	2.30	
1985	2.26	2.05	1.75	1.74	1.85	1.90	2.03	.2	1.90	1.83	1.85	1.81	
1986	1.61	1.44	1.21	1.33	1.49	1.62	1.59	1.56	1.63	1.69	1.71	1.84	
1987	1.80	1.68	1.54	1.57	*1.59								

Item and year	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average 2/
						Dollars per ton							
Hay (mid-month)													
1982	77.50	69.60	66.10	65.00	66.80	67.10	68.70	68.60	70.30	73.20	69.90	74.00	69.30
1983	78.10	72.70	71.20	71.20	74.70	76.80	75.10	76.70	76.60	78.70	79.40	79.80	75.80
1984	82.50	76.10	72.40	70.40	70.70	73.10	71.40	73.40	73.00	73.10	72.20	72.50	72.70
1985	80.80	70.20	67.90	65.20	67.10	67.50	64.30	65.40	65.80	66.70	67.10	66.20	67.60
1986	70.30	61.50	58.40	58.10	57.80	56.90	56.00	56.80	55.40	58.10	57.90	62.90	60.10
1987	73.30	63.20	61.60	61.80	65.10	65.10							

1/ Prices do not include an allowance for loans outstanding and government purchases. 2/ U.S. average prices based on U.S. monthly prices weighted by monthly marketings. *Preliminary.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.

Table 10.—Cash prices at principal markets, 1982-87

Item and year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	average
						Dollars per bushel							
CORN No. 2 Yellow, Central Illinois													
1982	2.55	1.94	2.24	2.28	2.35	2.62	2.82	3.08	3.09	3.14	3.26	3.58	2.75
1983	3.46	3.36	3.37	3.27	3.21	3.15	3.37	3.45	3.44	3.44	3.28	3.16	3.33
1984	2.92	2.66	2.61	2.56	2.64	2.64	2.68	2.72	2.69	2.64	2.60	2.42	2.65
1985	2.28	2.10	2.32	2.38	2.36	2.33	2.29	2.31	2.42	2.41	1.93	1.52	2.22
1986	1.34	1.34	1.55	1.52	1.44	1.38	1.46	1.56	1.75	1.74	1.60	1.46	1.51
1987	1.51	1.64											
CORN No. 2 Yellow, St. Louis													
1982	2.32	2.12	2.43	2.49	2.52	2.79	2.99	3.24	3.24	3.27	3.39	3.68	2.87
1983	3.60	3.50	3.53	3.45	3.41	3.31	3.55	3.61	3.58	3.57	3.43	3.33	3.49
1984	3.09	2.84	2.77	2.75	2.86	2.84	2.86	2.88	2.81	2.79	2.72	2.47	2.81
1985	2.38	2.27	2.50	2.59	2.55	2.50	2.42	2.46	2.56	2.52	2.01	1.67	2.37
1986	1.47	1.46	1.68	1.69	1.61	1.57	1.65	1.74	1.93	1.92	1.79	1.65	1.68
CORN No. 2 Yellow, Cult													
1982	2.55	2.33	2.62	2.68	2.74	2.98	3.18	3.39	3.40	3.43	3.57	3.38	3.02
1983	3.76	3.70	3.74	3.64	3.60	3.48	3.74	3.76	3.71	3.73	3.62	3.52	3.67
1984	3.31	3.08	2.98	2.90	3.03	3.04	3.05	3.05	2.96	2.95	2.92	2.67	3.00
1985	2.59	2.50	2.69	2.75	2.72	2.63	2.56	2.57	2.68	2.63	2.12	1.85	2.52
1986	1.68	1.66	1.83	1.81	1.72	1.70	1.82	1.89	2.06	2.05	1.93	1.81	1.83
1987													
CORN No. 2 Yellow, Omaha													
1982	2.23	2.12	2.35	2.37	2.42	2.62	2.82	3.09	3.10	3.11	3.18	3.39	2.73
1983	3.32	3.23	3.24	3.17	3.11	3.03	3.25	3.33	3.35	3.37	3.22	3.11	3.23
1984	2.94	2.71	2.61	2.55	2.60	2.61	2.68	2.73	2.68	2.70	2.61	2.39	2.65
1985	2.35	2.26	2.28	2.36	2.33	2.31	2.31	2.34	2.43	2.42	2.01	1.61	2.25
1986	1.41	1.40	1.55	1.54	1.44	1.39	1.47	1.57	1.76	1.77	1.59	1.47	1.53
SORGHUM No. 2 Yellow, Kansas City						Dollars per cwt							
1982	4.06	3.85	4.25	4.37	4.37	4.54	5.08	5.30	5.37	5.37	5.32	5.69	4.80
1983	5.55	5.37	5.25	5.16	5.09	5.03	5.40	5.36	5.39	5.40	4.95	4.74	5.22
1984	4.46	4.25	4.28	4.32	4.48	4.33	4.58	4.76	4.74	4.74	4.50	4.06	4.46
1985	3.56	3.62	3.75	3.97	3.95	3.80	3.82	4.00	4.25	4.00	3.20	2.71	3.72
1986	2.47	2.60	2.70	2.62	2.50	2.57	2.80	2.85	3.10	3.20	2.80	2.55	2.73
Sorghum No. 2 Yellow, Texas High Plains													
1982	4.39	4.08	4.38	4.65	4.82	5.19	5.52	5.94	5.76	5.81	5.86	5.85	5.19
1983	5.77	5.56	5.49	5.43	5.35	5..14	5.33	5.68	5.67	5.77	5.72	5.46	5.53
1984	5.22	4.95	4.86	4.90	4.84	9.86	4.98	5.14	5.22	5.25	5.24	--	5.04
1985	4.19	4.38	4.30	4.49	4.47	4.36	4.33	4.48	4.77	4.84	3.93	3.36	4.33
1986	3.35	3.24	2.97	3.06	2.94	2.89	3.06	3.32	3.56	3.60	3.58	3.30	3.24
1987													

Item and year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	average
						Dollars per bushel							
OATS No. 2 Heavy, Minneapolis													
1982	2.12	1.87	1.53	1.51	1.51	1.67	1.67	1.67	1.63	1.63	1.73	1.71	1.69
1983	1.67	1.60	1.79	1.94	2.00	1.97	1.94	1.98	1.82	1.88	1.89	1.96	1.87
1984	1.92	1.84	1.77	1.79	1.84	1.92	1.87	1.81	1.82	1.79	1.73	1.65	1.81
1985	1.59	1.44	1.23	1.24	1.19	1.32	1.39	1.37	1.30	1.27	1.16	1.22	1.31
1986	1.18	1.05	1.12	1.29	1.39	1.72	1.66	1.64	1.56	1.46	1.59	1.83	1.46
1987	1.64	1.61											
BARLEY No. 2 or Better Feed, Minneapolis 1/													
1982	2.12	1.85	1.72	1.69	1.54	1.58	1.59	1.63	1.72	1.73	2.01	1.95	1.76
1983	1.96	1.95	2.42	2.61	2.60	2.53	2.39	2.55	2.56	2.65	2.74	2.77	2.48
1984	2.59	2.18	2.13	2.05	2.10	2.06	1.88	1.98	1.99	1.97	2.05	2.05	2.09
1985	1.90	1.66	1.46	1.40	1.41	1.49	1.60	1.57	---	---	---	1.31	1.53
1986	1.23	1.16	1.13	1.27	1.50	1.63	1.23	---	---2/	1.64	1.76	1.86	1.44
1987	1.73	1.59											
BARLEY No. 3 or Better Malting, 65% or Better Plump, Minneapolis													
1982	2.93	2.63	2.48	2.37	2.42	2.45	2.37	2.38	2.42	2.45	2.68	2.76	2.53
1983	2.60	2.54	2.76	2.90	2.96	2.95	2.77	2.85	2.76	2.91	3.04	3.06	2.84
1984	3.04	2.86	2.48	2.44	2.43	2.43	2.36	2.46	2.47	2.51	2.52	2.55	2.55
1985	2.46	2.25	2.03	2.15	2.10	2.27	2.29	2.28	2.20	2.34	2.40	2.07	2.24
1986	1.84	1.75	1.61	1.76	1.93	2.02	1.88	1.81	1.92	2.01	2.05	2.12	1.89
1987	2.07	1.93											

1/ Reporting point changed from Minneapolis #2 feed to Duluth #2 feed beginning March 1987.

Source: Grain and Feed Market News, AMS, USDA.

Table 11.--Feed-price ratios for livestock, poultry, and milk, by months, 1981-87

Item and year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
HOG/CORN, U.S. basis 1/													
1981	19.1	18.4	17.7	16.3	17.1	19.8	19.8	20.1	21.8	22.4	23.1	26.6	20.2
1982	28.5	28.2	24.6	23.7	23.4	21.9	18.6	15.9	15.1	14.4	13.9	13.9	20.2
1983	13.3	12.8	11.8	14.0	15.4	14.6	14.3	14.3	14.1	14.6	15.8	16.2	14.3
1984	16.0	16.5	18.4	19.0	18.2	18.4	16.3	15.3	15.4	16.9	17.6	17.4	17.1
1985	17.3	20.4	19.5	19.8	19.0	18.4	17.6	17.3	19.2	22.7	29.5	35.9	19.9
1986	40.2	37.9	35.9	33.7	32.1	33.9	32.2	33.4	32.8	34.7	37.4	39.9	
1987 2/	36.4	32.4											
BEEF-STEER/CORN, Omaha 3/													
1981	26.0	25.2	25.0	25.0	24.6	25.9	26.5	26.5	27.2	26.5	26.1	29.2	26.1
1982	27.5	27.7	25.1	25.2	24.5	23.4	22.7	21.9	21.8	21.2	19.6	18.1	23.2
1983	17.8	18.4	18.3	19.8	21.6	22.1	21.1	20.4	19.7	19.1	20.4	20.7	20.0
1984	21.3	22.4	24.6	25.6	24.8	24.1	22.2	21.5	21.5	21.0	20.4	21.7	22.6
1985	21.8	25.7	27.8	26.7	25.6	24.4	24.0	22.9	23.0	22.3	28.9	36.7	25.8
1986	42.1	42.7	39.7	38.8	40.8	43.9	41.9	42.2	40.2	38.9	41.4	44.0	
1987 2/	42.9	41.8											
MILK/FEED, U.S. basis 4/													
1981	1.48	1.53	1.56	1.54	1.55	1.53	1.53	1.51	1.46	1.47	1.47	1.50	1.51
1982	1.57	1.61	1.62	1.60	1.59	1.56	1.55	1.49	1.45	1.43	1.45	1.41	1.53
1983	1.36	1.39	1.36	1.34	1.33	1.33	1.34	1.32	1.32	1.32	1.35	1.40	1.35
1984	1.48	1.56	1.62	1.59	1.57	1.57	1.55	1.51	1.47	1.45	1.44	1.47	1.52
1985	1.51	1.56	1.55	1.53	1.48	1.50	1.48	1.48	1.46	1.45	1.51	1.55	1.51
1986	1.61	1.75	1.77	1.77	1.74	1.69	1.63	1.62	1.58	1.55	1.55	1.60	
1987 2/	1.65	1.64											
EGG/FEED, U.S. basis 5/													
1981	6.4	6.5	7.2	6.7	6.6	6.8	7.1	6.6	5.6	5.3	5.7	5.4	6.3
1982	6.0	6.3	6.3	6.0	5.7	5.8	6.1	5.8	6.0	5.8	5.7	6.1	6.0
1983	6.0	6.2	6.9	7.7	8.8	8.5	7.4	8.6	6.5	5.8	5.8	5.8	7.0
1984	5.9	5.7	6.5	6.3	5.4	5.6	6.3	5.7	5.5	5.9	5.8	6.5	5.9
1985	7.1	7.3	7.5	7.4	7.2	6.9	7.6	6.4	6.4	5.7	6.9	7.3	7.1
1986	7.3	7.0	8.0	7.9	7.2	7.1	6.6	6.7	6.0	6.1	4.7	5.7	
1987 2/	6.7	6.1											
BROILER/FEED, U.S. basis 6/													
1981	2.4	2.4	2.4	2.3	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.5	2.5
1982	2.6	2.5	2.5	2.5	2.6	2.7	2.4	2.3	2.4	2.6	2.8	2.8	2.6
1983	2.7	2.5	2.8	2.9	3.1	3.1	3.1	2.7	2.7	2.7	3.0	2.7	2.8
1984	2.8	2.6	2.8	2.7	2.9	2.9	2.8	2.8	3.1	3.2	3.1	3.1	2.9
1985	3.2	3.1	3.5	3.2	3.2	3.1	3.1	3.1	3.4	3.7	4.5	4.6	3.4
1986	3.8	4.4	3.9	3.5	3.6	3.5	3.3	3.2	3.3	3.0	3.4	3.3	
1987 2/	3.0	2.6											
TURKEY/FEED, U.S. basis 7/													
1981	3.1	2.8	3.1	2.9	3.0	3.0	3.0	3.0	3.0	3.2	3.4	3.5	3.1
1982	3.8	3.9	3.9	3.0	2.9	2.9	2.9	2.7	2.9	3.0	2.8	2.8	3.1
1983	3.0	3.0	3.1	3.5	3.6	3.2	3.3	3.3	3.3	3.3	3.6	3.8	3.3
1984	3.9	4.4	5.0	5.5	4.7	3.8	3.7	3.7	3.7	3.8	4.2	4.5	4.2
1985	5.0	5.5	5.5	5.5	3.4	3.4	3.5	3.5	3.8	4.3	4.5	4.6	4.0
1986	4.7	4.9	4.8	4.0	3.3	3.4	3.6	3.5	3.3	3.3	3.1	2.9	
1987 2/	2.8	2.8											

1/ Bushels of corn equal in value to 100 pounds of hog, live weight. 2/ Preliminary. 3/ Based on price of choice beef-steers, 900-1,100 pounds. 4/ Pounds of 16 percent mixed dairy feed equal in value to 1 pound whole milk. 5/ Pounds of laying feed equal in value to 1 dozen eggs. 6/ Pounds of broiler grower feed equal in value to 1 pound broiler, live weight. 7/ Pounds of turkey grower feed equal in value to 1 pound turkey, live weight.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.

Table 12.--Price trends, selected feeds, and corn products

Item	Unit	Sept.-Aug. 1985/86 1/	1987						
			Apr.	May	June	July	Aug.	Sept.	Oct.
WHOLESALE, MOSTLY BULK 2/									
Soybean meal, 44% solvent, Decatur	$/ton	152	159	181	187	181	170	177	186
Soybean meal, high protein, Decatur	"	162	173	190	202	197	186	195	202
Cottonseed meal, 41% solvent, Memphis	"	129	134	150	155	167	164	142	151
Linseed meal, 34% solvent, Minneapolis	"	112	119	120	117	116	115	116	125
Meat and bone meal, Kansas City	"	166	192	217	222	222	210	213	221
Fishmeal, 65% protein, East Coast	"	284		336	360	354	363	364	373
Corn Gluten feed, Illinois pts.	"	89	98	97	94	91	92	97	99
Corn Gluten meal, 60% protein, Illinois pts.	"	209	213	226	268	269	241	260	279
Brewers' dried grains, Milwaukee	"	75	68	82	77	72	78	85	92
Distillers' dried grain, Lawrenceburg, Ky.	"	108	101	111	116	118	—	118	118
Feather meal, Arkansas Pts.	"	143	138	159	153	179	181	187	203
Wheat bran, Kansas City	"	60	36	38	36	44	38	56	67
Wheat middlings, Kansas City	"	60	36	38	36	44	38	56	67
Rice bran, f.o.b. mills, Arkansas	"	45	27	27	26	24	26	34	41
Hominy feed, Illinois pts.	"	81	53	67	69	74	71	65	66
Alfalfa meal, dehy., Kansas City	"	93	97	96	90	91	92	94	100
Cane molasses, New Orleans	"	67	59	59	53	51	49	45	45
Molasses beet pulp, Los Angeles	"	109	95	89	89	89	90	90	NA
Animal fat, Kansas City	¢/lb.	9.5	9.6	10.5	10.5	10.4	10.4	10.6	10.6
Urea, 42% N., Fort Worth	$/ton	217	225	225	225	225	225	225	
Corn, No. 2 white, Kansas City	$/bu.	2.49c	2.10	2.10	2.10	2.20	2.20	2.20	2.20
PRICES PAID, U.S. BASIS 3/									
Soybean meal, 44%	$/cwt	11.03	11.40	*	*	12.40	—	—	12.60
Cottonseed meal, 41%	"	11.43	12.50	*	*	13.00	—	—	13.10
Wheat bran	"	9.28	8.90	*	*	8.72	—	—	8.63
Wheat middlings	"	8.52	7.50	*	*	7.52	—	—	7.62
Broiler grower feed	$/ton	188	183	*	*	193	—	—	193
Laying feed	"	176	167	*	*	178	—	—	168
Turkey grower feed	"	213	209	*	*	217	—	—	216
Chick starter	"	189	188	*	*	206	—	—	187
Dairy feed, 16%	"	164	152	*	*	154	—	—	156
Beef cattle concentrate, 32-36% protein	$/cwt.	10.63	10.50	*	*	11.00	—	—	11.05
Hog concentrate, 38-42% protein	"	12.93	13.20	*	*	14.40	—	—	14.45
Stock salt	"	6.48	6.53	*	*	6.63	—	—	6.56
CORN PRODUCTS, WHOLESALE 4/									
Corn meal, New York Yellow	$/cwt.	12.60	11.35	11.70	11.67	11.18	10.91	11.04	11.23
Grits (brewers'), Chicago	"	9.65	8.33	8.70	8.65	8.16	8.33	8.03	9.42
Syrup, Chicago West	c/lb.	9.04	8.16	8.16	8.16	8.16	8.16	8.16	8.16
Sugar (dextrose), Chicago West	"	22.00	21.00	20.20	20.25	20.50	20.50	20.88	22.00
High-fructose (dried weight in tank cars), Chicago West	"	12.90	9.81	10.20	11.38	12.50	12.50	12.50	12.50
Corn starch, f.o.b. Midwest	$/cwt.	9.69	9.10	9.40	10.00	10.00	10.00	10.00	10.20

1/ Preliminary. 2/ Grain and Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Agricultural Prices, Agricultural Statistics Board, USDA. 4/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Table 13--Corn, sorghum, barley, and oats exports, 1985/86 to date--continued

Year and month	CORN			SORGHUM GRAIN	Year and month	BARLEY		OATS	
	Grain only	Total process	Grand total			Grain only	Total	Grain only	Total
	Bushels					Bushels			
1985/86					1985/86				
Sept	79,897,274	833,679	80,730,953	29,172,725	June	1,487,412	1,649,817	44,678	87,396
Oct	124,900,086	917,870	125,817,956	23,654,139	July	3,731,241	3,860,606	23,529	69,692
Nov	210,005,197	1,173,603	211,178,800	17,378,277	Aug	5,179,203	5,303,587	33,906	163,983
					Sept	831,326	937,470	52,866	89,470
1st Qtr	414,802,557	2,925,152	417,727,709	70,205,141	1st Qtr	11,229,182	11,751,480	154,979	410,541
Dec	175,971,674	2,540,388	178,512,062	11,858,105	Oct	2,652,026	2,799,218	120,219	153,203
Jan	164,709,634	1,351,663	166,061,297	17,264,657	Nov	3,768,477	3,869,960	111,195	350,174
Feb	119,524,523	1,157,729	120,682,252	13,994,213	Dec	112,702	237,932	23,556	37,750
2nd Qtr	460,205,831	5,049,780	465,255,611	43,116,975	2nd Qtr	6,533,205	6,907,110	254,970	541,127
Mar	97,479,313	922,855	98,402,168	6,723,066	Jan	1,119,603	1,546,100	8,934	69,750
Apr	57,426,414	786,654	58,213,068	8,597,402	Feb	49,160	116,456	43,584	96,515
May	46,520,450	1,254,677	47,775,127	11,610,994	Mar	1,148	192,476	250,397	288,260
3rd Qtr	201,426,177	2,964,186	204,390,363	26,931,462	3rd Qtr	1,169,911	1,855,032	302,915	454,525
June	55,802,755	1,016,137	56,818,892	10,467,071	Apr	720,309	816,587	49,085	93,425
July	44,609,875	871,083	45,480,958	17,830,311	May	57,584	472,599	473,733	693,272
Aug	50,484,684	1,068,258	51,552,942	9,436,885					
					4th Qtr	777,893	1,289,186	522,818	786,697
4th Qtr	105,897,314	2,955,478	153,852,792	37,734,267					
					Total	19,710,191	21,802,808	1,235,682	2,192,890
TOTAL	1,227,331,879	13,894,596	1,241,226,475	177,987,845					
					1986/87				
1986/87					June	2,000	276,815	79,108	128,492
Sept	80,082,655	1,181,307	81,263,962	14,227,263	July	1,164,620	1,597,139	81,504	217,421
Oct	124,025,138	818,619	124,843,757	18,547,828	Aug	12,319,164	12,514,711	73,364	335,437
Nov	114,104,314	848,497	114,952,811	14,680,456	Sept	12,772,707	12,912,177	121,288	327,625
1st Qtr	318,212,107	2,848,423	321,060,530	47,455,547	1st Qtr	26,258,491	27,300,842	355,264	1,008,975
Dec	109,759,488	925,574	110,685,062	19,954,747	Oct	16,480,986	16,559,353	167,403	411,976
Jan R.	104,283,400	990,714	105,274,114	15,484,239	Nov	14,292,746	14,363,851	32,293	167,870
Feb	98,787,906	657,881	99,445,787	20,749,712	Dec	14,532,134	14,661,828	17,314	315,049
2nd Qtr	312,830,794	2,574,169	315,404,963	56,188,698	2nd Qtr	45,305,866	45,585,032	217,010	894,895
Mar	143,717,211	1,658,289	145,375,500	24,415,530	Jan	1,205,709	1,262,335	30,960	75,145
Apr	183,288,269	992,304	184,280,573	12,956,519	Feb	16,084,544	16,522,282	30,776	178,452
May	169,091,351	1,485,054	170,576,405	13,788,332	Mar	17,639,725	18,150,611	115,234	277,846
3rd Qtr	496,096,831	4,135,647	500,232,478	51,160,381	3rd Qtr	34,929,978	35,935,228	176,970	531,443
June	120,026,244	791,997	120,818,241	12,940,287					
July	133,984,531	916,175	134,900,706	22,883,734	Apr	16,599,968	17,153,570	105,251	191,418
Aug	111,320,100	688,763	112,008,863	7,698,710	May	10,522,937	10,726,481	67,436	168,607
4th Qtr	365,330,875	2,396,935	367,727,810	43,522,731	4th Qtr	27,122,905	27,880,051	172,687	360,025
TOTAL	1,492,470,607	11,955,174	1,504,425,781	198,327,357	TOTAL	133,617,240	136,701,153	921,931	2,795,338
1987/88					1978/88				
					June	517,681	754,738	104,217	187,886
Sept.	135,403,937	727,001	136,130,948	17,832,854	July	7,421,463	7,675,576	50,113	92,430
					Aug	8,813,825	9,257,652	18,135	153,171
					Sept	10,014,514	10,217,330	24,184	62,343
					1st Qtr	26,847,483	27,905,299	196,649	495,830

Total corn exports include grain only (white, yellow, seed, relief), dry process (cornmeal for relief, as grain, grits), and wet process (corn starch, sugar dextrose, glucose, high fructose). Sorghum includes seed and unmilled. Barley includes grain only (grain for malting purposes, other) and barley malt. Oats include grain and oatmeal (bulk and packaged).

Source: Bureau of the Census, U.S. Department of Commerce.

Table 14.--Corn, sorghum, barley, and oats imports, 1985/86 to date

Year and month	CORN		SORGHUM	Year and month	BARLEY		OATS	
	Grain only	Total	Total		Grain only	Total	Grain only	Total
	Bushels				Bushels			
1985/86				1985/86				
Sept	8,086	33,974	0	June	340,425	588,237	1,728,933	1,757,614
Oct	314,654	350,199	0	July	251,910	478,428	1,889,404	1,931,401
Nov	540,018	600,046	1,429	Aug	61,653	345,756	825,818	834,833
				Sept	109,312	347,927	1,288,425	1,304,864
1st Qtr	862,758	984,219	1,429	1st Qtr	763,300	1,760,348	5,732,580	5,828,712
Dec	121,966	258,092	0	Oct	872,324	1,087,159	1,256,991	1,264,610
Jan	374,481	483,279	0	Nov	339,674	591,311	1,672,252	1,678,864
Feb	456,976	540,101	0	Dec	592,242	689,112	3,210,457	3,232,191
2nd Qtr	953,423	1,281,472	0	2nd Qtr	1,804,240	2,367,582	6,139,700	6,175,665
Mar	369,991	416,011	0	Jan	528,661	935,239	3,264,356	3,284,460
Apr	623,207	662,745	630	Feb	1,413,559	1,589,598	2,394,906	2,418,051
May	1,212,047	1,240,983	0	Mar	261,745	443,802	2,336,953	2,366,047
3rd Qtr	2,205,245	2,319,739	630	3rd Qtr	2,203,965	2,968,719	7,996,215	8,068,558
June	1,765,143	1,774,942	0	Apr	385,235	616,253	3,574,702	3,591,060
July	2,994,897	3,082,335	797	May	1,088,551	1,276,845	3,795,409	3,822,076
Aug	1,116,694	1,139,076	0					
				4th Qtr	1,473,786	1,893,098	7,370,191	7,413,136
4th Qtr	5,876,734	5,996,353	797					
				TOTAL	6,245,291	8,989,747	27,238,686	27,486,071
TOTAL	9,898,160	10,581,783	2,856					
				1986/87				
1986/87				June	1,296,495	1,501,548	5,325,371	5,345,316
Sept	311,213	332,783	6,329	July	15,140	223,046	1,841,943	1,868,602
Oct	66,792	107,949	0	Aug	19,469	210,558	1,537,423	1,559,704
Nov	333,201	353,750	33	Sept	75,927	307,474	846,095	879,869
1st Qtr	711,206	794,482	6,362	1st Qtr	1,407,031	2,242,626	9,550,832	9,653,491
Dec	66,353	131,009	0	Oct	31,578	207,980	1,262,426	1,292,827
Jan REV.	85,979	134,935	0	Nov	926,059	1,193,914	2,695,161	3,342,153
Feb	14,207	52,622	86	Dec	173,536	310,750	1,241,736	1,261,139
2nd Qtr	166,539	318,566	86	2nd Qtr	1,131,173	1,712,644	5,199,323	5,896,119
Mar	29,812	63,602	0	Jan	392,962	681,307	3,981,067	4,020,146
Apr	400,056	428,391	0	Feb	625,953	772,737	3,994,932	4,027,553
May	19,009	30,652	0	Mar	1,808,103	1,888,079	2,277,619	2,300,061
3rd Qtr	448,877	522,645	0	3rd Qtr	2,827,018	3,342,123	10,253,618	10,347,760
June	326,401	339,131	0	Apr	508,133	591,606	3,401,071	3,434,844
July	32,223	48,591	197	May	792,379	849,842	3,951,545	3,988,454
Aug	71,486	471,582	0					
				4th Qtr	1,300,512	1,441,448	7,352,616	7,423,298
4th Qtr	430,110	471,582	197					
				TOTAL	6,665,734	8,738,841	32,356,389	33,320,668
1987/88								
				1987/88				
Sept	130,361	137,954	-0-	June	683,655	895,760	3,730,421	3,760,272
				July	195,998	212,386	1,717,932	1,735,424
				Aug	220,222	434,659	1,541,932	1,582,781
				Sept	1,061,243	1,396,495	1,541,932	1,582,741
				1st Qtr	2,161,118	2,939,300	8,531,570	8,661,218

Corn includes grain only (yellow dent corn, other), seed, and cornmeal. Sorghum is grain only. Barley includes grain only (barley for malting, other), pearl barley, milled and malting. Oats include grain (hulled or unhulled, unhull oats fit and unfit for human consumption, and oatmeal fit for human consumption.

Source: Bureau of the Census, U.S. Department of Commerce.

Table 15.--Hay (all); acreage, supply, and disappearance, 1982-87

Item	Unit	1982/83	1983/84	1984/85	1985/86 1/	1986/87	1987/88
Acreage harvested	Mil. acres	59.8	59.7	61.4	60.6	62.3	60.2
Yield per acre	Tons	2.50	2.36	2.45	2.46	2.46	2.55
Carryover (May 1)	Mil. short tons	25.0	28.1	20.1	26.9	26.7	32.4
Production	"	149.2	140.8	150.6	148.6	155.3	153.7
Supply	"	174.2	168.9	170.7	175.5	182.0	186.1
Disappearance	"	146.1	148.8	143.8	148.8	149.2	N.A.
Roughage-consuming animal units (RCAU)	Mil. units	90.2	89.1	85.7	83.1	80.8	79.1
Supply per RCAU	Tons	1.93	1.89	1.99	2.11	2.25	2.35
Disappearance per RCAU	"	1.62	1.67	1.68	1.79	1.85	N.A.

1/ February 1986 crop indications. N.A=Not available.

Table 16.--Annual hay production, pasture-range index (October 1), and prices received by farmers, 1982-87

Year	North-east	Lake States	Corn Belt	Northern Plains	Appa-lachian	South-east	Delta States	Southern Plains	Mountain	Pacific	United States 1/
						Thousand tons					
1982											
Hay production	13,150	25,364	23,674	26,391	8,845	3,631	3,950	10,224	20,767	13,245	149,241
Pasture-range index	77	85	86	85	82	79	80	62	92	83	81
1983											
Hay production	12,901	24,986	19,229	24,625	7,644	3,116	3,524	11,202	20,429	13,108	140,764
Pasture-range index	67	79	47	69	48	67	62	50	86	93	67
1984											
Hay production	13,539	26,495	24,207	26,145	9,701	3,905	3,667	8,971	20,131	13,887	150,648
Pasture-range index	77	75	69	64	69	62	70	43	86	84	70
1985											
Hay production	13,685	24,828	24,803	22,352	10,876	3,894	3,860	12,965	18,121	13,575	148,959
Pasture-range index	81	87	78	75	76	75	78	74	70	71	76
1986											
Hay production	13,401	21,193	24,235	28,403	8,518	3,025	3,886	11,755	21,219	14,036	155,271
Pasture-rand index	82	89	84	90	74	63	75	87	86	80	83
1987											
Hay production	13,458	25,133	22,827	24,600	11,591	4,246	4,063	12,330	21,355	14,132	153,717
Pasture-range index	82	81	76	81	71	71	74	88	76	67	79

Mid-October prices	Penn-sylvania	Wis-consin	Iowa	Kansas	Kentucky	Arkansas	Texas	Colorado	Cali-fornia	United States
						Dollars per ton				
1980	66.00	40.00	56.00	66.00	59.50	52.50	74.00	63.00	99.00	77.20
1981	93.00	62.00	52.00	57.00	62.00	44.00	58.00	65.00	70.00	64.80
1982	81.00	63.00	51.00	56.00	66.00	50.00	69.00	61.00	82.00	67.10
1983	93.00	69.00	72.00	77.00	87.00	69.00	77.00	69.00	88.00	76.80
1984	93.00	59.00	57.00	73.00	78.00	61.00	97.00	72.00	81.00	75.10
1985	64.00	59.00	46.00	52.00	67.00	53.00	67.00	65.00	79.00	66.00
1986	78.00	48.00	37.00	50.00	67.00	48.00	58.00	57.00	67.00	57.40
1987	87.00	51.00	40.00	57.00	64.00	49.00	62.00	62.00	79.00	65.10

1/ U.S. price weighted by regional production.

Table 17.--Processed feeds; quantity fed, 1981-86 2/

Feed	Year beginning October					
1981	1982	1983	1984	1985	1986 2/	
	- - -1,000 metric tons - - -					
HIGH PROTEIN						
Oilseed meal						
Soybean 3/	16,070	17,514	15,980	17,622	17,318	18,461
Cottonseed	1,848	1,495	1,022	1,595	1,379	1,018
Linseed	635	84	113	109	100	115
Peanut	107	67	68	112	158	93
Sunflower	181	393	218	278	284	236
Total	18,270	19,554	17,401	19,766	19,239	19,924
Animal proteins						
Tankage and meat meal	2,261	2,251	2,243	2,621	2,620	2,440
Fishmeal and solubles	480	412	453	589	388	386
milk products	301	362	368	387	353	452
Total	3,026	3,026	3,063	3,597	3,361	3,277
Grain protein feeds						
Gluten feed and meal	1,298	1,298	1,606	2,477	2,039	1,960
Brewers' dried grains	194	194	135	141	135	145
Distillers' dried grai	681	681	574	923	1,164	1,190
Total	2,174	2,174	2,315	3,541	3,338	3,295
OTHER						
Wheat millfeeds	,4579	5,058	5,078	5,040	5,408	5,770
Rice millfeeds	667	588	456	550	579	722
Dried and molasses beet	1,395	1,016	1,037	1,126	1,165	1,321
Alfalfa meal	898	887	898	808	775	622
Fats and oils	657	657	657	665	774	758
Molasses, inedible	974	944	948	937	940	934
Miscellaneous byproduct feeds 4/	1,270	1,270	1,267	1,267	1,267	1,267
Total	10,440	10,421	10,341	10,394	10,908	11,394
Grain total	33,770	35,174	33,120	37,298	36,846	37,890

1/ Adjusted for stocks, production, foreign trade, and nonfeed uses where applicable. 2/ Partically forecast. 3/ Includes use in edible soy products and shipments to U.S. territories. 4/ Allowance for hominy feed, oat millfeeds, and screenings.

Table 18.--Feed concentrates fed, number of animal units, and feed per unit, 1981-86

Item	Crop year					
	1981	1982	1983	1984	1985	1986 1/
	Million metric tons					
Concentrates fed						
Corn	105.9	114.8	97.0	103.6	104.0	119.8
Sorghum	10.6	12.6	9.8	13.7	16.9	13.9
Oats	10.5	11.6	11.4	11.2	11.0	9.6
Barley	5.5	7.2	7.1	7.9	7.8	7.0
Wheat and rye	3.4	7.2	12.4	9.9	10.5	9.6
Oilseed meals	18.3	19.6	17.4	19.8	19.2	19.9
Animal protein feeds	3.0	3.0	3.1	3.6	3.4	3.3
Grain protein feeds	2.0	2.2	2.3	3.5	3.3	3.3
Other byproduct feeds	10.4	10.4	10.3	10.4	10.9	11.4
Total	169.6	188.6	170.8	183.6	187.1	197.8
	Million units					
Grain-consuming animal units (GCAU's)						
Dairy cattle	12.2	12.4	12.4	12.2	12.5	11.8
Cattle on feed	16.3	18.5	17.8	19.1	17.6	16.8
Other cattle	4.9	4.8	4.7	4.5	4.3	4.2
Hogs	20.3	20.5	20.4	19.8	19.2	19.3
Poultry	18.5	18.4	18.6	19.0	19.7	20.9
Other livestock	2.0	2.0	2.0	1.9	1.9	2.0
Total						
	Tons per unit					
Concentrates fed/GCAU						
Four feed grains	1.78	1.91	1.65	1.78	1.85	2.00
All concentrates	2.28	2.46	2.25	2.40	2.48	2.64

1/ Partically forcasted

Table 19.--High-protein feed; quantity fed and high-protein animal units, 1981-86 2/

Year beginning October	Quantity fed (in 44% protein soybean meal equivalent)				High-protein animal units	Fed per animal unit
	Oilseed meal	Animal protein	Grain protein	Total		
	- - - 1,000 metric tons - - -				Million	Pounds
1981	19,720	3,429	1,075	24,224	104.5	511
1982	20,968	3,356	1,168	25,492	105.6	532
1983	18,403	3,401	1,283	23,088	105.6	482
1984	20,666	4,035	1,985	26,686	106.1	555
1985	20,135	3,772	1,850	25,757	106.8	532
1986 2/	20,914	3,580	1,818	26,312	109.2	531

1/ Excludes urea and other nitrogenous compounds. 2/ Forecast.

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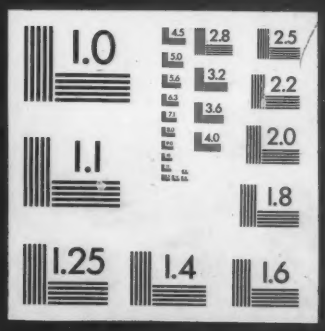
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